# THE OIL WEEKLY

ENGINEERING « NEWS » STATISTICS

**EDITORIAL STAFF**
WARREN L. BAKER
*Editor*
J. KENT RIDLEY
*Managing Editor*

**ASSOCIATE EDITORS**
L. J. LOGAN — BRAD MILLS
WM. V. GROSS

**DISTRICT EDITORS**
B. F. LINZ.....Washington
GRADY TRIPLETT, FRANK TAYLOR.....Tulsa
H. H. KING.....Fort Worth
EARL S. POST.....San Antonio
R. W. BYRAM.....Austin
CHAS. LEYENDECKER.....Houston

PUBLISHED BY
THE GULF PUBLISHING COMPANY
HOUSTON, TEXAS

R. L. DUDLEY, *President*
A. L. BURNS, *General Manager*
S. W. ROBINSON, *Editorial Director*

*Staff correspondents at all important points.*

*Member Audit Bureau of Circulation*
*Member Associated Business Papers, Inc.*

**BRANCH OFFICES**
NEW YORK.....250 Park Ave.
PITTSBURGH.....Vandergrift Bldg.
CHICAGO.....332 S. Michigan Ave.
LOS ANGELES..W. W. Wilson Bldg., Huntington Park, Calif.
TULSA.....Hunt Bldg.
FORT WORTH.W. T. Waggoner Bldg.
SAN ANTONIO.....233 Bedell Bldg.
WASHINGTON.....Albee Bldg.

**ADVERTISING STAFF**
DICK SWINSKY.....New York
RANDALL E. BROOKS.....New York
C. A. WARDLEY.....Pittsburgh
H. G. FITZPATRICK.....Chicago
J. F. CARTER, JR.....Tulsa
JAY CURTS, JR.....Los Angeles
CHAS. WYATT.....Houston

**CIRCULATION DEPARTMENT**
J. T. WAGONER.....Manager

SPECIALIZED OIL JOURNALS
*Published by*
THE GULF PUBLISHING COMPANY


## The Oil Man's Calendar

| | |
|---|---|
| **FEB.** | |
| 7 | East Texas Chapter, A.P.I., Kilgore. |
| 13–16 | American Institute of Mining and Metallurgical Engineers, Annual Meeting, New York. |
| 23–25 | American Society of Mechanical Engineers, New Orleans, Louisiana. |
| 23–25 | Louisiana Engineering Society, New Orleans, Louisiana. |
| 25 | North Texas Oil and Gas Association, Wichita Falls, Texas. |
| **MAR.** | |
| 16–17 | Southwestern District, American Petroleum Institute, Division of Production, San Antonio. |
| 20–22 | Western Petroleum Refiners Association, San Antonio, Texas. |
| 21–23 | Society of Exploration Geophysicists, Huckins Hotel, Oklahoma City. |
| 22–24 | American Association of Petroleum Geologists, Skirvin Hotel, Oklahoma City, Oklahoma. |
| **APR.** | |
| 3–7 | American Chemical Society, Baltimore, Maryland. |
| 11 | Pacific Coast District A.P.I. Division of Production, Los Angeles. |
| 13–14 | National Petroleum Association, Cleveland, Ohio. |
| 18–19 | Mid-Continent District, American Petroleum Institute Division of Production, Oklahoma City, Okla. |
| 24–29 | Oil-World Exposition, Houston, Texas. |
| **MAY** | |
| 3–5 | Petroleum Electric Supply Association, Houston, Texas. |
| 3–5 | Petroleum Industry Electrical Association, Houston, Texas. |
| 3–5 | Natural Gasoline Association of America, Tulsa, Oklahoma. |
| 15–18 | American Petroleum Institute, Mid-Year Meeting, New Orleans, Louisiana. |
| **JUNE** | |
| 15–16 | Pennsylvania Grade Crude Oil Association, Hershey, Pa. |

# Contents « February 6, 1939


Volume 92, Number 9



**The Changing Panorama** ..... 11-12

**Feature Section** ..... 13

Difficulties Threatened by Less Strict Allowables ..... 13
BY L. J. LOGAN

Eola Discovery Shows Multiple Sand Possibilities of Sparta-Wilcox Trend ..... 15
BY JOHN D. TODD AND FRANK C. ROPER

Chemical Control of Heaving Shale ..... 21
BY CHESTER L. BAKER AND ALLEN D. GARRISON

Automobile Accidents are Challenge to the Oil Industry ..... 36
BY C. L. HIGHTOWER

**News Section and News Index** ..... 59

**Men in the Industry's News** ..... 56

**World Developments** ..... 52

**Squeaks from the Bull Wheel** ..... 97

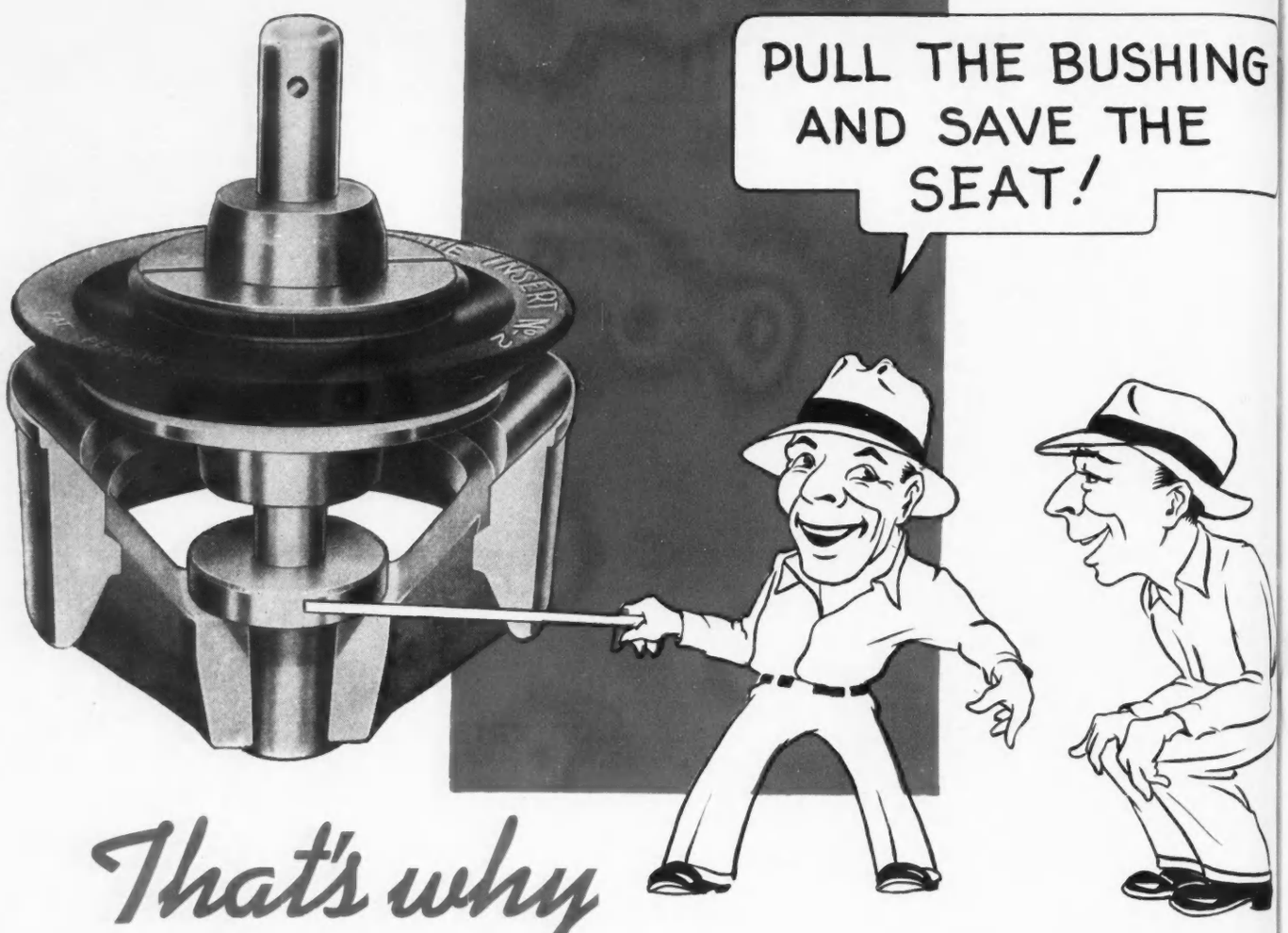
**Notes for the Equipment Buyer and User** ..... 91

**Letters to the Editor** ..... 87



Published every Monday. Single Copies 15 cents (Special Issues 50c). Subscription price, domestic and foreign, $2.00 a year; 2 years $3.00. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil industry or the manufacturing and distribution of oil field supplies. Advertising rates on application.


Copyrighted 1939, by The Gulf Publishing Company.




*That's why*

# MISSION *Silver Top* VALVES

## LAST 100% LONGER

**Instead of throwing away a valve and seat costing $15.00 to $37.25,** according to size, the operator merely replaces the worn bushing with a new one at a cost of only $1.50 to $2.25.

**Because of superior design,** accurate machining, scientific heat treating, rigid inspection . . Mission Valves last far longer than conventional type valves, even disregarding the feature of removable wear-taking bushings.

**IMPORTANT:** However, by changing the bushing at reasonable periods the operator keeps his valves continuously working like new and at the same time increases their life more than 100%.

●

**Proven by exhaustive tests and performance records in every oil country to be by far the most economical valve to operate.**

MISSION POLICY
"IF A PRODUCT DESIGNED BY MISSION IS NOT . . . PROVEN *Superior* MISSION WILL NOT PRODUCE IT"

MISSION MANUFACTURING CO.
HUMBLE ROAD, HOUSTON, TEXAS
EXPORT OFFICE: 30 ROCKEFELLER PLAZA, NEW YORK

• • • • SLIPS • VALVES • PISTONS • PISTON RODS • SWABS

# This Week's Panorama

THE oil industry currently is troubled with the familiar difficulty of holding supply in balance with demand, even though the general business recovery has appreciably stimulated consumption of most of the petroleum products.

Supply is straining at the tethers at the wells and at the refineries, as both crude production and refinery runs proceed at comparatively high levels.

### Crude Market Disturbed

In various fields, crude oil is being sold for less than the posted prices, estimates indicating that 100,000 to 150,000 barrels of daily production is without market or else moving to market at cut-prices.

Especially disturbing to the crude markets of the Mid-Continent is the rapidly mounting production in Illinois, which has been steadily displacing crude from other states.

### Refined Oil Markets Endangered

Refinery runs of crude oil also have been larger than economically desirable in recent weeks, and there is a danger of an over-building of inventories of gasoline and other refined products.

The markets for refined oils are still suffering from excessive crude runs and the accumulation of surplus stocks last year, and there is now danger of a repetition of those excesses.

### Statistics Reflect Current Operations

Current trends of crude production and refinery operations and the present inventory situation are reflected in the latest weekly statistics of the industry, covering the week ended January 28.

United States crude oil production during the week averaged 3,248,250 barrels daily, which was 16,000 barrels a day less than in the previous week and about 20,000 barrels a day less than the indicated market demand for domestic crude in January, as estimated by the Bureau of Mines, which does not suggest what part of requirements should come from current production and what part from storage. This production rate was 3.2 percent lower than that in the corresponding week last year.

### Crude Runs to Stills Down

Crude oil runs to refinery stills came down 75,000 barrels in the week ended January 28, having dropped off to 3,235,000 barrels daily. Despite the decrease, however, the refinery runs were heavier than economically desirable, as pointed out in more detail in the accompanying discussion of the gasoline situation. The runs at the new rate were 2.1 percent larger than in the corresponding week a year before.

### Gasoline Stocks Increased

Despite the reduction of refinery runs, gasoline production increased 128,000 barrels in the week of January 28, and 1,824,000 barrels of gasoline were

**AIRPLANES USED EXTENSIVELY BY OIL INDUSTRY**

Extensive use of airplanes in the oil industry is reflected in this picture by the "sock," or wind vane on top of the elaborately equipped derrick.

The well, a deep heaving shale test in Matagorda County, Texas Gulf Coast, was drilled below 11,000 feet by Continental Oil Company, an operator that makes extensive use of the airplane.

added to storage, the stocks having risen to 77,279,000 barrels. At that rate of increase, the gasoline stocks would be as high in a few weeks as they should be allowed to rise by March 31, according to estimates of petroleum economists, who recommend peak stocks of only around 80,000,000 barrels for the beginning of spring.

Total stocks of gas and fuel oil were reduced 1,742,000 barrels in the week of January 28, as consumption of both light and heavy gas oils continued comparatively large. The stocks of oils and distillates declined 426,000 barrels, and those of heavy oils were reduced 1,316,000 barrels. Total gas and fuel oil stocks at the end of the week amounted to 139,349,000 barrels. That was 17.3 percent more than the supply held one year previously. But consumption of fuel oils is up similarly.

Crude oil stocks have been gradually reduced since the beginning of the year, a further withdrawal of about 700,000 barrels having been made in the week ended January 21. The crude stocks then stood at 271,110,000 barrels, which was approximately 2,000,000 barrels under the total on hand December 31.

At the level of 271,110,000 barrels the crude oil stocks were 12.3 percent lower than one year previously and only about 1,500,000 barrels above the 17-year low of 269,509,000 barrels that was reached in the week ended December 10.

Although crude oil stocks were reduced about 30,000,000 barrels in 1938, some of the large companies still hold substantial quantities of surplus crude that they would like to liquidate, and some withdrawals from the surplus stocks apparently are now under way.

## Past Mild Weather Revises Gasoline Outlook

THE oil industry continues in danger of reaching the beginning of spring with too much gasoline in storage, despite the considerable curtailment of refinery runs of crude oil in the week ended January 28.

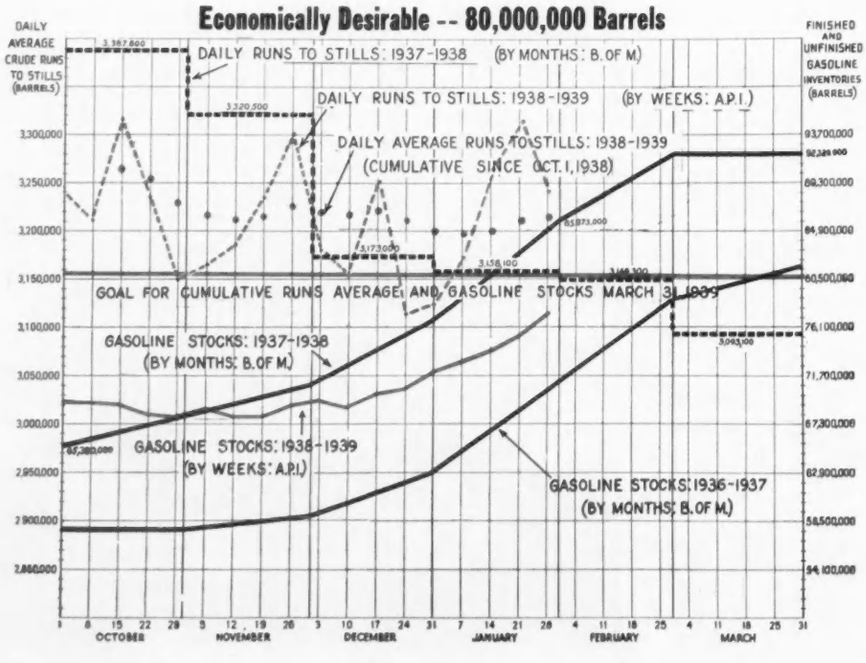
This danger has been emphasized in the past few weeks by the snows and cold weather that have interrupted the hitherto mild fall-winter season.

The industry has been maintaining comparatively heavy refinery runs since the beginning of the past fall, and large additions of gasoline to storage normally would have resulted; but because of the unusually mild weather and the resultant well-sustained motoring and gasoline consumption, gasoline stocks have been increasing only moderately.

The less favorable weather that has developed lately changes the picture, however, and if continued for an extended period, it might cause sharply accelerated additions to gasoline storage, despite possible further curtailment of refinery runs.

Heretofore, a chart has been presented in these columns each week, showing the current trends of refinery runs and fluctuations in gasoline stocks. The chart also indicated what effect the prevailing refinery runs might be expected to have on gasoline stocks as of March 31. The chart was prepared by Fred Van Covern, of New York, economist for the American Petroleum Institute, having been presented originally before meetings of the Texas Railroad Commission and the Interstate Oil Compact Commission in December, as a suggestion of economically desirable refinery operations in the fall and winter.

**What Are Finished and Unfinished Gasoline Inventories Going to Be on March 31, 1939?**


Economically Desirable -- 80,000,000 Barrels
DAILY AVERAGE CRUDE RUNS TO STILLS (BARRELS)
FINISHED AND UNFINISHED GASOLINE INVENTORIES (BARRELS)
DAILY RUNS TO STILLS: 1937-1938 (BY MONTHS: B. OF M.)
DAILY RUNS TO STILLS: 1938-1939 (BY WEEKS: A.P.I.)
DAILY AVERAGE RUNS TO STILLS: 1938-1939 (CUMULATIVE SINCE OCT. 1, 1938)
GOAL FOR CUMULATIVE RUNS AVERAGE AND GASOLINE STOCKS MARCH 31, 1939
GASOLINE STOCKS: 1937-1938 (BY MONTHS: B. OF M.)
GASOLINE STOCKS: 1938-1939 (BY WEEKS: A.P.I.)
GASOLINE STOCKS: 1936-1937 (BY MONTHS: B. OF M.)
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH

In view of the outlook for gasoline consumption in 1939, it was estimated that gasoline stocks as of March 31 should not be over about 82,000,000 barrels, and that such a level of stocks could be achieved by holding refinery runs between October 1 and March 31 to a cumulative daily average of 3,100,000 barrels.

However, the milder than normal weather in the final quarter of 1938 and the initial half of January resulted in larger than expected gasoline demand, and gasoline stocks have not increased alarmingly even in the face of comparatively heavy refinery runs. The runs from October 1 through January 28 averaged 3,207,000 barrels daily; and the actual effect on gasoline stocks meanwhile was a build-up only to 77,279,000 barrels. The same runs in normal weather for the season, however, probably would have resulted in present gasoline stocks of nearly 81,000,000 barrels.

There is still a possibility that

[*Continued on page 67*]

# Difficulties Threatened By Less Strict Allowables

**Authorized crude output for February larger than indicated market demand in most leading producing states, and allowables are not strictly observed.**

By L. J. LOGAN, Associate Editor

CURTAILMENT of crude oil production under February allowables is not as strict as the control in past months, and adverse effects on the industry's situation and markets consequently are threatened.

In the loosened control of crude output there is danger of additions to crude storage, unsettled crude oil markets, excessive runs of crude to refinery stills, and weak markets for refined products.

## February Allowables

The six leading producing states exclusive of Illinois, accounting for 89 percent of all United States current production, have combined allowables for February that are 27,970 barrels daily, or 1 percent, above the indicated market demand for domestic crude, as estimated by the Bureau of Mines.

Even if all of the six states stayed strictly within their allowables, 27,970 barrels daily would be forced into storage during February, indicating an addition of about 800,000 barrels to above-ground stocks within the month, according to the forecast of demand. However, some of the states regularly produce somewhat more than their official allowables, and such excesses would add to the surplus above demand in February.

## State Quotas Exceeded

Louisiana lately has been producing around 10,000 barrels a day more than the state allowable, even though the allowable itself has been about 10,000 barrels above indicated market demand.

California has been producing around 20,000 barrels a day more than the official state allowable, despite the special efforts to curtail. And the California allowables, too, have been materially above indicated market demand.

For February, Louisiana's state allowable is 8340 barrels a day or 3.1 percent above the Bureau of Mines estimate of market demand for the oil of the state. And the California allowable is 25,000 barrels, or 4.3 percent, above the indicated market demand.

Texas allowables as of February 1 permitted production 40,830 barrels daily, or 3.1 percent, larger than expected demand. Kansas is exceeding its demand 5300 barrels daily, or 3.6 percent, under February allowables; and New Mexico shows an excess of 3000 barrels, or 3 percent. But Oklahoma's allowable is 54,500 barrels daily, or 11.3 percent, under the indicated demand.

Illinois has no state proration, and the only restriction on crude production from flush fields of the state is that applied by the purchasing companies. Illinois production currently is averaging around 135,000 barrels daily, although the Bureau of Mines estimate of demand for February was only 102,500 barrels daily.

Thus Illinois is conspicuously over-producing its firm market demand, while production is excessive also in most of the other leading producing states, except Oklahoma, under February allowables.

## Markets Impaired

Because of the comparatively high levels of production, crude oil is being sold at less than regular posted prices in various fields, particularly in Illinois and Michigan.

Furthermore, large output of crude undoubtedly has been partially responsible for recent excessive refin-

**February Allowables for Most Producing States Above Bureau of Mines Estimates of Demand for Domestic Crude**

**(Barrels daily)**

| STATE | Bureau of Mines Forecast of Demand | State Allowable Beginning of Month | Excess or Deficiency of State Allowable | Percent Excess or Deficiency |
|---|---|---|---|---|
| California | 580,000 | *605,000 | +25,000 | +4.3 |
| Kansas | 148,600 | 153,900 | +5,300 | +3.6 |
| Louisiana | 246,800 | 255,140 | +8,340 | +3.1 |
| New Mexico | 99,600 | 102,600 | +3,000 | +3.0 |
| Oklahoma | 482,500 | 428,000 | —54,500 | —11.3 |
| Texas | 1,297,500 | †1,338,330 | +40,830 | +3.1 |
| Total Six States | 2,855,000 | 2,882,970 | +27,970 | +1.0 |
| Other States | 365,000 | ..... | ..... | ..... |
| Total United States | 3,220,000 | ..... | ..... | ..... |

* Recommendation of Central Committee of California Oil Producers.
† Average daily production permitted for 7 day week as a whole; actual daily allowable higher, but fields shut-in on Saturdays and Sundays.

## Bureau of Mines Forecasts Reflect Trends of Demand

(Barrels)

| MONTH | Total Demand for Domestic Crude | MOTOR FUEL DEMAND | | |
|---|---|---|---|---|
| | | Domestic | Export | Total |
| **August:** | | | | |
| August, 1938, forecast | 106,580,000 | 50,000,000 | 4,500,000 | 54,500,000 |
| August, 1937, actual | 113,148,000 | 49,597,000 | 3,771,000 | 53,368,000 |
| Change from year ago | —5.8% | +0.8% | +19.3% | +2.1% |
| **September:** | | | | |
| September, 1938, forecast | 103,330,000 | 47,000,000 | 4,400,000 | 51,400,000 |
| September, 1937, actual | 110,962,000 | 47,245,000 | 4,456,000 | 51,701,000 |
| Change from year ago | —6.9% | —0.5% | —1.2% | —0.6% |
| **October:** | | | | |
| October, 1938, forecast | 104,370,000 | 45,800,000 | 4,400,000 | 50,200,000 |
| October, 1937, actual | 111,984,000 | 45,361,000 | 3,830,000 | 49,191,000 |
| Change from year ago | —6.8% | +1% | +14.9% | +2.0% |
| **November:** | | | | |
| November, 1938, forecast | 101,740,000 | 42,700,000 | 3,800,000 | 46,500,000 |
| November, 1937, actual | 107,264,000 | 42,666,000 | 3,309,000 | 45,975,000 |
| Change from year ago | —5.5% | —0.1% | +14.8% | +1.1% |
| **December:** | | | | |
| December, 1938, forecast | 102,480,000 | 40,100,000 | 3,300,000 | 43,400,000 |
| December, 1937, actual | 106,921,000 | 39,465,000 | 2,442,000 | 41,907,000 |
| Change from year ago | —4.2% | +1.6% | +35.1% | +3.6% |
| **January:** | | | | |
| January, 1939, forecast | 101,390,000 | 36,230,000 | 3,400,000 | 39,630,000 |
| January, 1938, actual | 104,619,000 | 35,176,000 | 3,090,000 | 38,266,000 |
| Change from year ago | —3.1% | +3% | +10% | +3.6% |
| **February:** | | | | |
| February, 1939, forecast | 90,160,000 | 33,400,000 | 3,400,000 | 36,800,000 |
| February, 1938, actual | 93,734,000 | 31,861,000 | 3,931,000 | 35,792,000 |
| Change from year ago | —3.8% | +4.9% | —13.5% | +2.8% |

ery runs, which have endangered the markets for refined products.

### Oil Demand Encouraging

In early 1939 the demand for petroleum and petroleum products has been more than fulfilling expectations, and the outlook for consumption is distinctly encouraging.

The Bureau of Mines has forecast that domestic demand for motor fuel, principal product of the industry, will be 5 percent larger in February, 1939, than in February, 1938. That is the most optimistic prediction yet made by the bureau, and it possibly reflects the fact that similar estimates in the past several months have proved too conservative.

For December, 1938, for instance, the bureau forecast that domestic demand for motor fuel would be 1.6 percent larger than in December, 1937, and that total demand, including exports, would be up about 3.6 percent. Actually, however, domestic demand in December apparently was up about 5 percent and total demand was up possibly 8 to 10 percent.

Similarly, the bureau predicted that domestic demand for motor fuel would be 3 percent larger in January, 1939, than in January, 1938, and that total demand, including exports, would be up 3.6 percent. But in the initial half of January, demand actually was larger than those expectations. The domestic consumption appeared to be running about 12 percent ahead of last year's record; and as exports were heavy, total demand showed an even larger gain. Although less favorable weather prevailed later in January, retarding consumption, the actual January demand for gasoline undoubtedly was materially larger than the Bureau of Mines forecast.

In its forecast for February, the Bureau of Mines estimated that domestic demand for motor fuel would be 4.9 percent larger this year than last year. But the forecast of motor fuel exports indicated 13.5 percent smaller shipments in February, 1939, than in February, 1938. Consequently, the forecast of total demand for gasoline indicates a 2.8 percent increase for February, 1939, over February, 1938.

The Bureau of Mines stated in connection with its forecast that the weather in February during the past 13 years has been the most variable of any month and that the variations have been most extreme. The weather consequently adds to the difficulty of estimating motor fuel demand, and in February it may result in a difference of more than a million barrels in gasoline consumption either above or below normal.

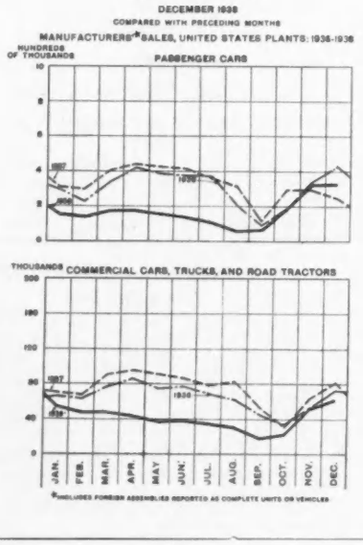
The bureau explained that its estimate of increased demand for motor fuel in February was based on improved business conditions and the long-time upward trend of motor fuel demand per vehicle.

The daily average supply of domestic crude oil estimated by the Bureau of Mines as needed to meet the market demand in February, 1939, was 3,220,000 barrels, or 4 percent less than the actual demand for domestic crude in February, 1938.

The demand for crude oil was expected to be smaller because the anticipated gasoline stock increase for February, 1939, was only 4,500,000 barrels, compared with an actual increase of 5,904,000 barrels in February, 1938; because the gasoline yield was estimated as 44.0 percent, compared with an actual yield of 42.8 percent in February, 1938; and because the forecast of crude oil for export, fuel and losses was lower.

## Brisk Sales of Automobiles Stimulate Gasoline Demand

Sales of automobiles, trucks, and tractors in early 1939 are exceeding expectations, and gasoline consumption is being affected favorably.




Automobile manufacturers revised their production schedules upward in January, and assemblies during the month totaled around 360,000 units, whereas output of only about 325,000 vehicles was contemplated at the beginning of the month.

It is expected that production in the first quarter of 1939 will be a little larger than the highly satisfactory output of 1,013,000 units in the final quarter of 1938. That would represent about 55 percent more business than in the initial quarter of 1938, when 668,317 vehicles were assembled.

Factory sales of automobiles, cars, trucks, and road tractors in 1938 totaled 2,489,635 units, or only about one half as many as in 1937, when 4,808,974 vehicles were sold. The 1938 sales were 44 percent lower than those of 4,454,115 units in 1936.

# Eola Discovery Shows Multiple Sand Possibilities of Sparta-Wilcox Trend

By JOHN D. TODD and FRANK C. ROPER
Consulting Geologists

THE gradually increasing importance of the Sparta Wilcox Trend has been lurched into high gear by the discovery of prolific Wilcox production at Eola in Avoyelles Parish, Louisiana. One hundred and five feet of saturated oil sand is news in any area, but what has suddenly magnified the importance of the Trend is the fact that most of the oil fraternity did not expect a producing section of that caliber at that location.

While interest in the Eocene is freshly stimulated by the recent Eola discovery, it may be timely to briefly review and discuss the various formations which comprise our Eocene well sections in this Trend. The sediments of the Eocene readily divide themselves into convenient lithological zones with associated foraminiferal changes.

**The authors have specialized on the geology of the Louisiana Coast for the past five years. They discussed the Sparta-Wilcox Trend in The OIL WEEKLY's Gulf Coast Number (July 25, 1938), and at that time predicted Wilcox production in Avoyelles Parish, as well as forecasting 100-foot thick Wilcox sand bodies. The Eola strike proved both of the statements.**

### The Eocene

Considering the Eocene from the top down, as it is encountered by the bit, we come first to a predominantly shale body known as the Jackson. This top member of the Eocene does have a few sands in places in the Hockley and Diboll zones, but they are of no great importance and disappear very rapidly down dip into shales. The Jackson runs as much as 1000 feet in thickness at places in Texas, but on the Louisiana side thins very rapidly until it seldom exceeds 250 feet in thickness and is usually deeply buried by the younger beds.

Below the Jackson shales are encountered the Yegua beds, which consist mainly of sands. The prolific Cockfield production at Conroe is of Yegua age. Many wells have been drilled to and through the Yegua, so that much is known about this formation, but it is not within the main purview of this paper. It is, however, interesting to note in passing that Yegua sand conditions are best on the southern extension of the Sabine Uplift, which explains the excellent sand conditions at Bancroft. Although the Yegua has not been satisfactory farther east in Louisiana, it has been suggested that it might be better north and east due to the inland swing of the Eocene Embayment shore line.

Underneath the Yegua sands lie the Cook Mountain shales, which are characteristically greenish and carry the *ceratobuliminas*. The upper portion of the Cook Mountain has been subdivided in Texas, but is usually considered as a unit on the Louisiana side. These Cook Mountain shales form the usual cap over the Sparta sand in Louisiana.

The continental Sparta sand comprises the lower portion of the Cook Mountain. On the Texas side this sand shales up very rapidly, so that it does not appear as a sand in the logs of the down dip wells. But in Louisiana, the Sparta remains a sand down to about its 9000-foot level. Of course there is always a time equivalent, but there is no sand equivalent on the Texas side of the deep Sparta production on the Louisiana side. The Sparta might prove productive farther updip, where it is still a sand, on the Texas side.

Below the Sparta bed lies the Mount Selman formations, which have been divided on the Texas side into the Weches, Queen City and Reklaw. The Queen City and Reklaw both pinch out eastward, so that they have no Louisiana equivalent. The Louisiana equivalent of the Weches (and of any portion of the Queen City and Reklaw that may carry over) is the Cane River. On both sides of the Sabine River the formations of this age are predominantly shales.

Underneath the Mount Selman or Cane River shales lie the thick beds of the Wilcox. The Wilcox is a formation of enormous thickness, as much as 3200 feet of it having been penetrated in wells. At least in the upper portions, the Wilcox is predominantly sands; quite thick sands and more than a few of them. On the basis of available knowledge it now seems that these Wilcox sands will persist as blanket bodies over the entire Trend, and will not be subject to the acute variations that characterize both the Cockfield and the Sparta.

Below the Wilcox sands lie the

Midway shales. The massive, marine Midway shales appear to be excellent source beds, but very little can be expected of them as reservoirs.[1]

It must be kept in mind that our present knowledge of the down dip facies of both the Sparta and the Wilcox is very meager. Only a few wells have been drilled into these formations at interesting levels, so that our understanding of their down dip condition is quite fragmentary. As more wells are drilled, and more facts obtained to reason from, many of our present ideas will no doubt be greatly altered.

### The Limits of the Trend

The upper limits of the Trend have been assumed to be the 5000 foot levels of the Sparta and the Wilcox. On the basis of the very meager information available, it is our opinion that both the Sparta and Wilcox have been flushed with meteoric waters down to about their 5000 foot levels. Certain it is, that with their very great sand outcrops catching enormous amounts of rain water, these formations will be very deeply flushed. The connate - meteoric contact will no doubt vary from region to region, and may be influenced by faulting which could prevent downward migration. However, it is our belief that this contact will eventually be established somewhere around the 5000 foot levels.

It is true that some oil is now being produced from both the Sparta and the Wilcox above their 5000 foot levels; but in most cases this oil is being produced, or was initially produced, in association with fresh water. It is our opinion that this shallower oil was formed and accumulated prior to the flushing of the formation, as it is our understanding that experiments have demonstrated that oil will not form in the presence of fresh water.

It is our firm belief that very little oil will be produced from above the meteoric-connate contact, wherever that line shall eventually prove to be.

The lower limit of the Trend is taken to be about the 9000 foot horizon on each formation. The basis for this lower limit, is the evidence from several wells which indicates that the formations shale up very rapidly below 9000 feet. It is our belief that production from either the Sparta or the Wilcox below 9000 feet will not be prolific.

It should be kept in mind that the lines on the map showing the 5000 foot level and the 9000 foot level are only generalizations. It is manifest that the 5000 foot level on the Sparta will vary geographically from the 5000 foot level on the top of the Wilcox; and that in like manner the down dip extent of the producing possibilities of the different horizons will vary. And due to the great thickness of the Wilcox, the productive limits of the different sand bodies within it may well be expected to vary geograpically.

On the west end of the Trend it appears that the Wilcox may shale up about Colorado or Austin County. This opinion is based on the fact that the Yegua sands do shale up in that direction, and the fact that such information as is available from very few wells does indicate shaling in that direction. However, farther south in Goliad County the Wilcox is again sandy.

The east limits of the Trend are not known now. Certainly conditions are favorable as far east as Eola, where there are three available sands and one of them first class in every respect. It would be unexpected for such excellent sand conditions to disappear in a few miles, and Mississippi is only a short distance away; so that it does now appear that State has excellent prospects for Wilcox production,

**The Sparta-Wilcox**

[1] Excellent electric log strike and dip sections, showing the relation of all these Eocene sediments in the deeper wells of this Trend, have been prepared by Frank Reedy, Jr., of the Geology Department of Texas University.

and definite possibilities in the Cockfield and Sparta.

### Sand Conditions

Any ability to predict in which part of the Trend sand conditions will be best, involves much more subsurface knowledge than is now available. All our present ideas on sand conditions are based on very few wells supplemented by a very large dose of theory—which in time may or may not prove to be sound.

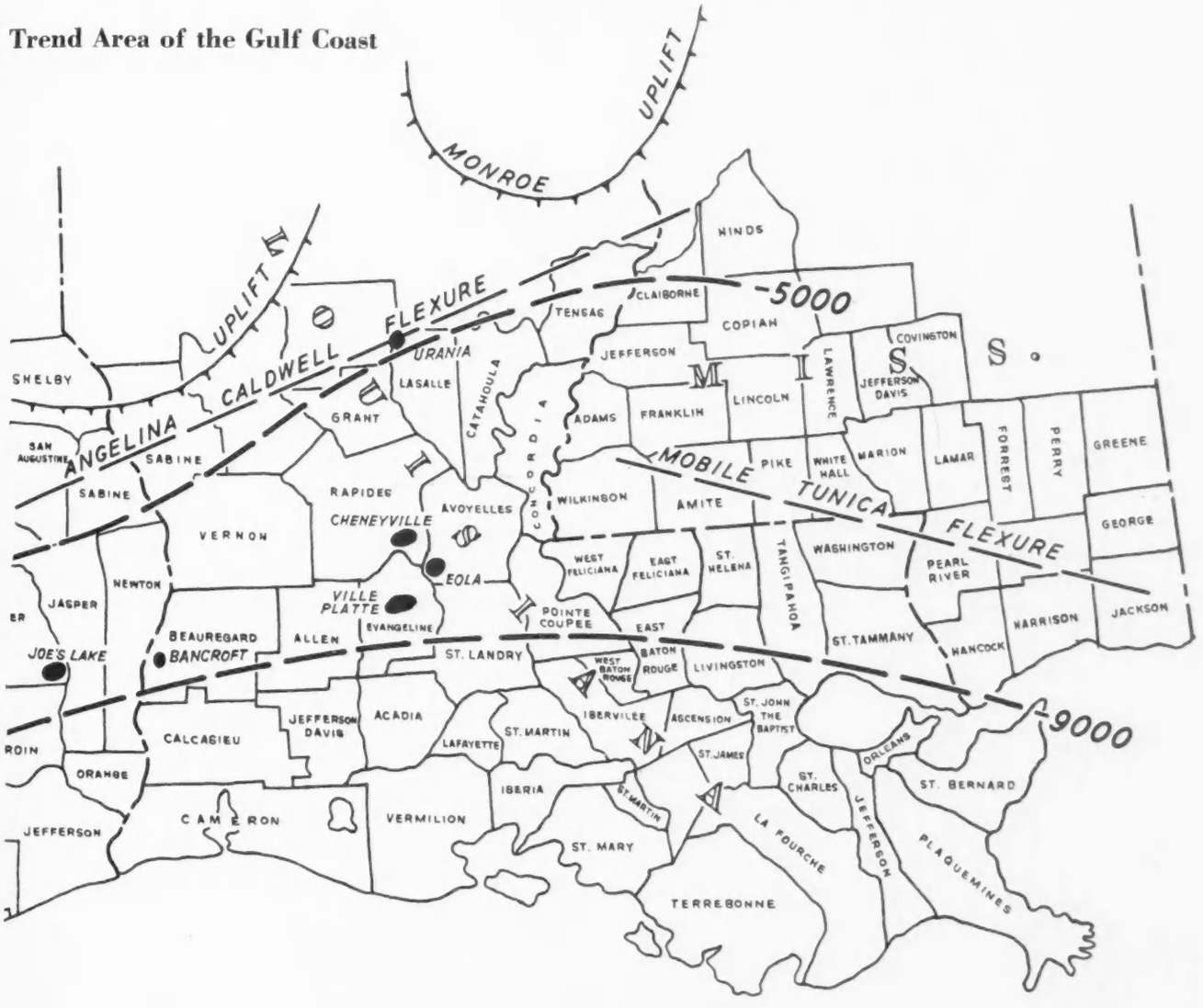
Four typical electric core logs (from dry holes, not from fields) are shown herewith, which demonstrate some of the things that we know about the Sparta section. From these logs it is apparent that the Sparta thins on the Texas side and becomes shaley west of the Sabine River. It also appears that the sand seems to increase as you go north and east, so that the logs from the northern part of Avoyelles Parish, Louisiana, show the best Sparta sand sections.

If space permitted other logs could be adduced to demonstrate that on the Louisiana side, the Sparta shales up very rapidly below its 9000 foot level. This shaling has already begun to manifest itself at Ville Platte, where the lower half of the producing section is much more shaley than the upper portion. Also from the Batchelor well in Pointe Coupee and the Herton well in St. Landry, it is clear that when you get far enough down dip the "Sparta Sand" has become a shale.

The up dip limits of the Sparta production are not known, but as suggested before, will probably be limited by the connate - meteoric contact. It also seems likely that the Sparta (which it must be kept in mind is of continental origin) will be subject to lateral as well as vertical variation, so that we may have favorable north-south sand zones. Also it may prove true, as is the case with Yegua sands, that the Sparta sands increase in thickness on structure. Whatever the reasons ultimately prove to be, it is our belief that the Sparta will prove to be a variable sand and not an even blanket deposit; with the result that it may be thick in one area and thin close by. It is noteworthy that the Sparta at Eola and Cheneyville is much thinner than it is at Ville Platte, but that farther north and east in Avoyelles Parish the section is much thicker and more porous than it is at Ville Platte.

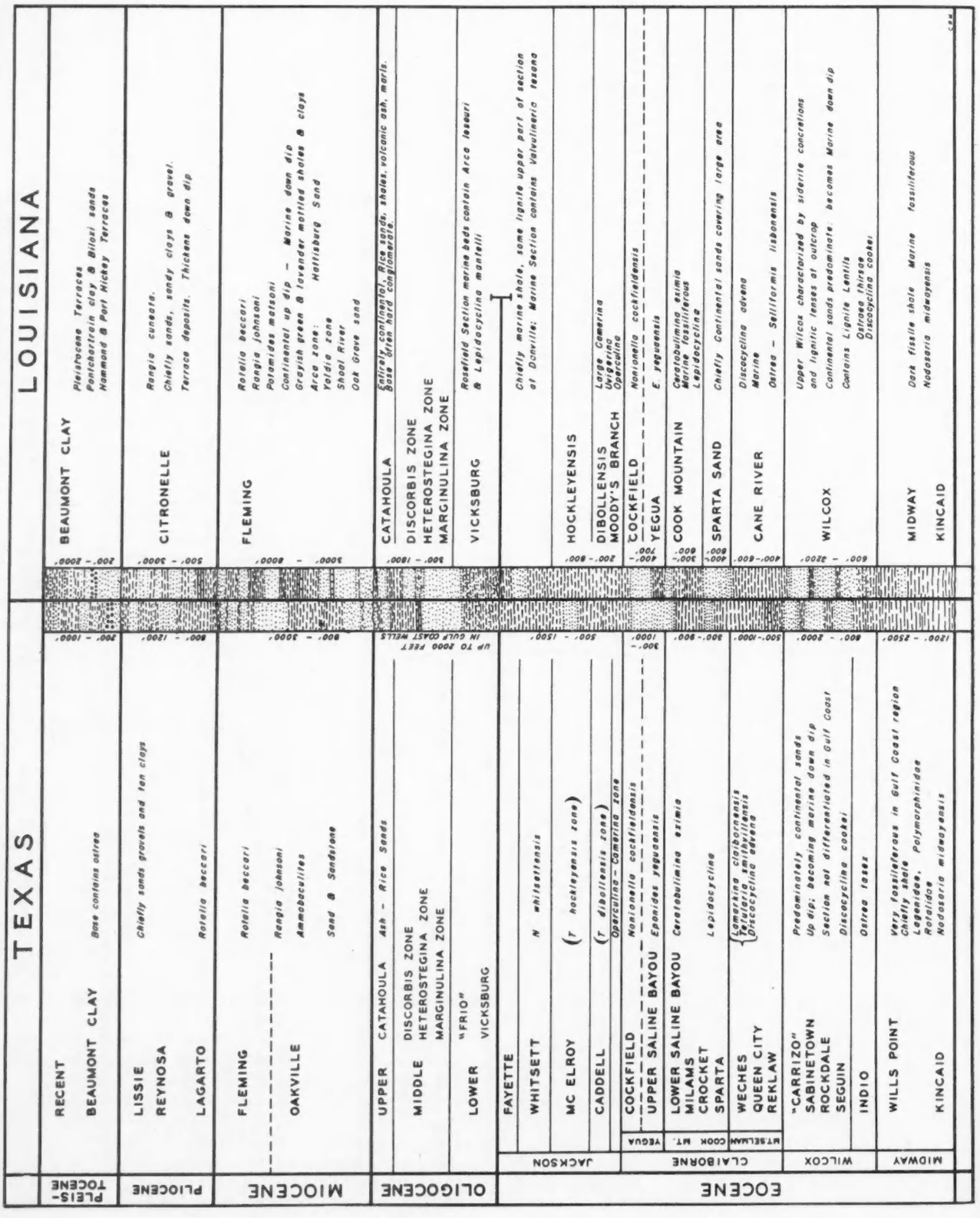
Four typical electric core logs of the Wilcox section are shown here, which serve to illustrate some of the few facts that we know about the Wilcox. Very few wells have been drilled to the deeper Wilcox, but all of the obtained data seems to point to highly optimistic possibilities. From the shown electrical logs, it

**Trend Area of the Gulf Coast**



is apparent that in the top of the Wilcox there are sizable sands which persist in blanket fashion over very great areas. From all the available evidence the Wilcox does seem to be a horizon that can be counted on to rival the Oligocene in productivity.

The down dip limits of Wilcox production are fairly well established at some level above 10,000 feet; presumably around 9000 foot levels. This we are assured by wells in northern Harris County and St. Landry Parish, Louisiana, which have penetrated the Wilcox at depths below 10,000 feet and found it too tight to constitute a satisfactory reservoir. It is also believed to be true that the Wilcox at Ville Platte cannot be counted on to produce much oil. Of course it is probable that, at some points due to local conditions, sand conditions will be satisfactory below 9000 feet and even below 10,000 feet; but it is our firm belief that



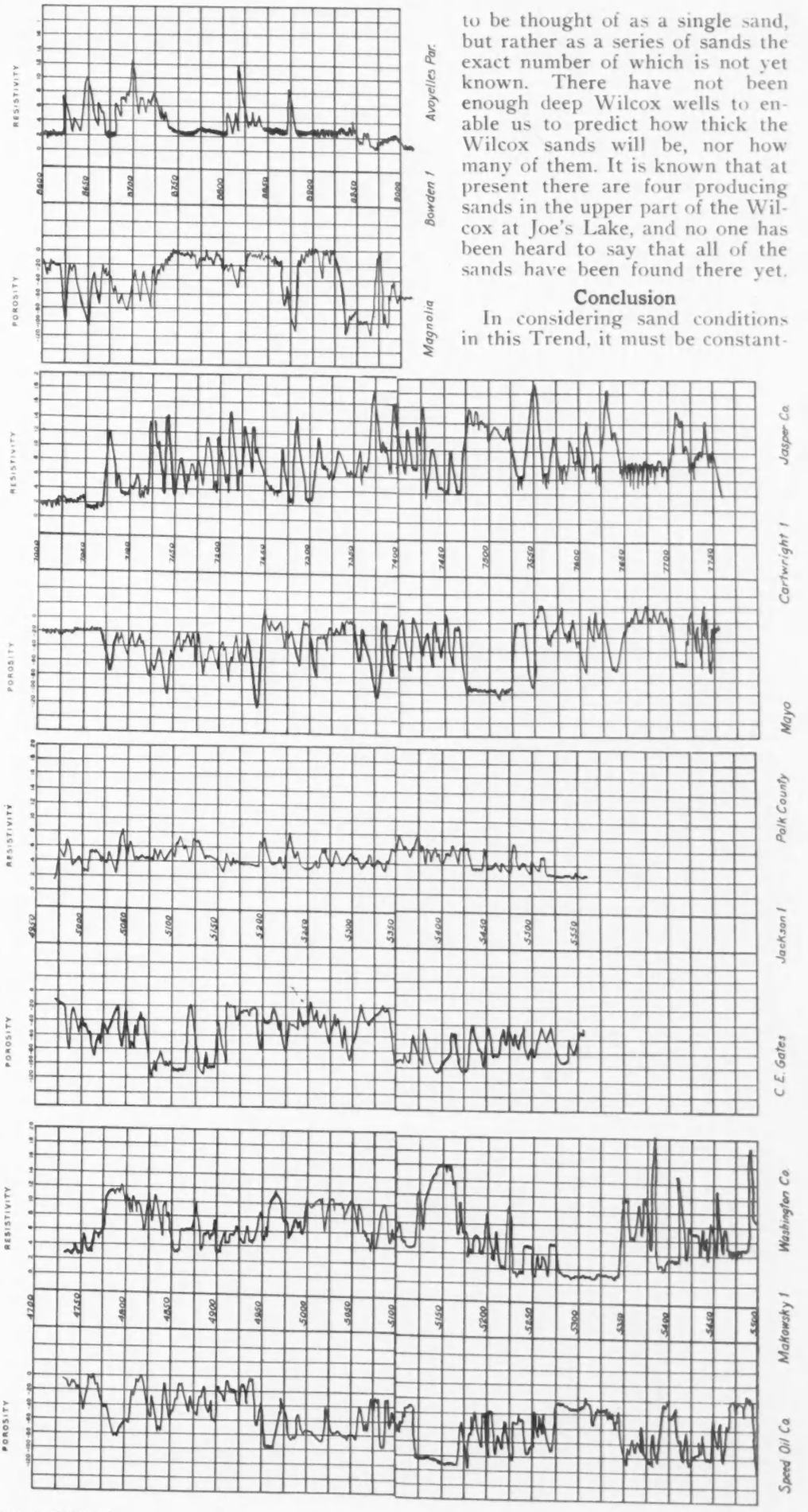
most of the Wilcox oil will be produced from wells less than 10,000 feet deep.

On the up dip side, the sands of the Wilcox should constitute excellent reservoirs up to the meteoric water contact, which we assume will be around 5000 feet on the average. Between the shale line on the south and the fresh water line on the north, the conditions appear well suited for the accumulation of oil in the various sands of the Wilcox.

The Wilcox is not to be thought of as a single sand, but rather as a series of sands the exact number of which is not yet known. There have not been enough deep Wilcox wells to enable us to predict how thick the Wilcox sands will be, nor how many of them. It is known that at present there are four producing sands in the upper part of the Wilcox at Joe's Lake, and no one has been heard to say that all of the sands have been found there yet.

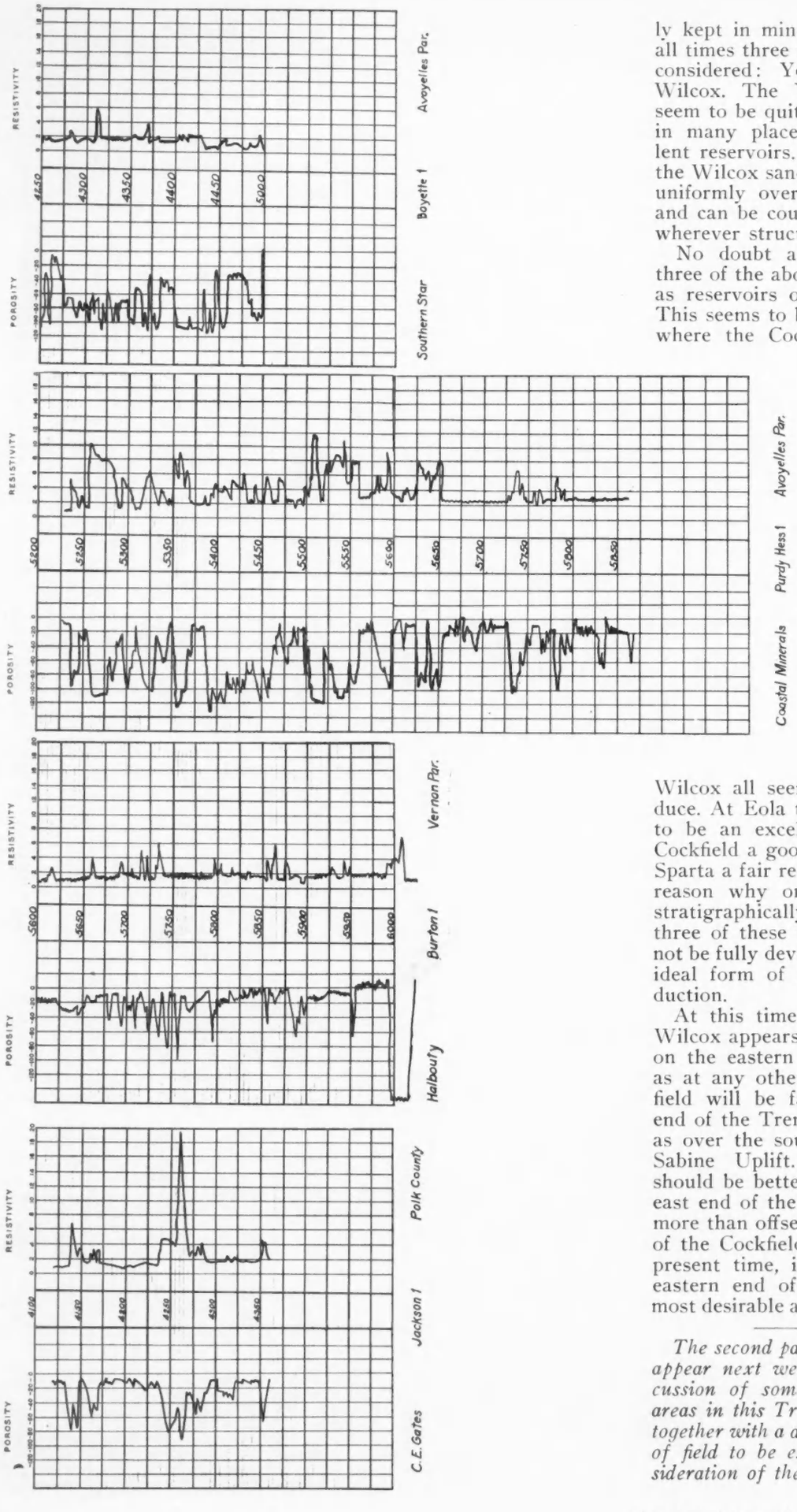
## Conclusion

In considering sand conditions in this Trend, it must be constant-




**Typical Wilcox Sand Electric Logs**

**Typical Sparta Sand Electric Logs**




ly kept in mind that there are at all times three sand horizons to be considered: Yegua, Sparta, and Wilcox. The Yegua and Sparta seem to be quite variable, but will in many places constitute excellent reservoirs. It is believed that the Wilcox sands will extend quite uniformly over the entire Trend, and can be counted on to produce wherever structurally trapped.

No doubt at many places all three of the above sands will serve as reservoirs on some structures. This seems to be the case at Eola, where the Cockfield, Sparta and Wilcox all seem destined to produce. At Eola the Wilcox appears to be an excellent reservoir, the Cockfield a good reservoir and the Sparta a fair reservoir. There is no reason why on some structures, stratigraphically well located, all three of these sand bodies should not be fully developed to give us an ideal form of multiple sand production.

At this time it seems that the Wilcox appears about as favorable on the eastern end of the Trend, as at any other point. The Cockfield will be fair on the eastern end of the Trend, but not so good as over the southern flank of the Sabine Uplift. But the Sparta should be better developed on the east end of the Trend, and should more than offset any shortcomings of the Cockfield. All in all, at the present time, it appears that the eastern end of the Trend is the most desirable area for prospecting.

---

*The second part of this article will appear next week, involving a discussion of some of the producing areas in this Trend, including Eola, together with a discussion of the type of field to be expected, and a consideration of the future of the area.*

# Chemical Control of Heaving Shale

By CHESTER L. BAKER,
Philadelphia Quartz Company, and
ALLEN D. GARRISON,
Rice Institute

**Deep drilling for oil has been barred in certain areas by "heaving" or caving of the hole. It is shown that "heaving" may result from the establishment of a serious pressure differential in the hole or from hydrous disintegration of "heaving shale." The latter can be avoided by using a drilling mud rich in silicate of soda and sodium chloride. The requirements in such a mud, its formulation and use in the field are discussed with a brief description of the equipment required and special problems that must be met. Considerable success has been attained in the field application of the method. It appears that this method properly applied can be depended upon to prevent heaving due to hydrous alteration of shale drilled with its use.**

**This paper was presented before the American Institute of Chemical Engineers, as its meeting in Philadelphia, November 9, 10 and 11, 1938, and was published in the Institute's transactions December 25, 1938.**

THIS is a review of a new chemical engineering technique which appears to offer promise in overcoming an important barrier to deeper exploration for oil. Space permits the inclusion of only such supporting experimental evidence as will make for clear understanding of the problem and the present state of development.

The barrier comprises thick beds of heaving shale which had previously proven almost impenetrable. Greatest difficulty has been experienced in a belt of land about 100 miles wide extending along the Gulf Coast of Texas and Louisiana. Here trouble has been experienced in the Miocene, Oligocene and Eocene, although most commonly in the Vicksburg of the lower Oligocene and the Jackson of the upper Eocene. Heaving shale has been encountered in Colombia, Venezuela, Madagascar and the East Indies. Recently it has been reported in California and it is not unlikely that with deeper drilling it will be found in other parts of this country.

Heaving shale is most often defined as "shale that heaves," and even the word "heave" is interpreted in the field as referring to various disasters from simple caving to movement of shale hundreds of feet up into the hole. Certain it is that bore holes have had to be redrilled many times; that after becoming stuck, drill pipe has been pulled in two in an effort to remove it; that in many cases a carload or more of shale has been washed up out of a heaved well; that drill pipe has been snapped off at the bottom of the set casing; that Grade "D" casing has been badly distorted and that even producing wells have been shut off due to a collapse in the casing.

Various explanations of "heaving" have been offered, among which may be mentioned:

1. Falling of highly fractured shale into the hole.
2. Localized seismic movement.
3. Plastic flow of the shale.
4. Explosion into the hole by high gas or water pressure.
5. Establishment of pressure differentials.
6. Hydrous alteration of the shale.

Nearly four years' experience with this problem has not revealed to the authors any authentic case which could not be adequately explained by the last two phenomena. It is felt that this simplification of the problem marks definite progress toward its solution.

Pressures normally encountered in drilling approach one half-pound per square inch for each foot in depth so that a hole 10,000 feet deep may have a bottom-hole pressure as high as 5000 pounds per square inch. In order to prevent the flow of fluids from the formation into the hole it is customary to use a drilling mud with a specific gravity high enough to balance this pressure. The imposed hydrostatic head can be seriously reduced in a number of ways. The withdrawal of a piston-like mudded-up bit or otherwise "swabbing" the hole is a common cause. The loss of weighting material from the mud amounting to one pound per gallon will reduce the bottom-hole hydrostatic head in a 10,000-foot hole by 520 pounds per square inch. A single cubic foot of gas entering the mud at the bottom might expand to 340 cubic feet by the time it reaches the surface and create a bottom-hole pressure differential of 640 pounds per square inch or more. It is easy to understand the effect of such differential pressures on a material so mechanically weak as many of the shales encountered. Such factors are subject to mechanical control.

The chemical control of heaving shale is based on the observation that certain shales, when drilled through, are altered by the water in the drilling mud. As shown in Figures 1-a and 1-b, one type slowly swells as it hydrates and in the well tends to constrict the bore hole, ultimately seizing the drill pipe. Another type disintegrates under the influence of water and in the well results in the formation of a cavity which ultimately permits caving of the overhanging, more

**FIGURE 1-a**
**Four shale types, dry.**

**FIGURE 1-b**
**Shale samples shown in Figure 1-a after immersion in water.**

resistant shale. It is this more resistant material which is invariably recovered from the hole after such a "heave" and has often been blamed for the trouble. See Figures 2-a and 2-b.

The authors believe that the only heaving which can be definitely related to the character of the shale is caused by those shales which are subject to hydrous alteration and think of them as the only true "heaving shales." The term will be restricted to such material in the balance of this paper.

A number of methods for preventing the hydrous disintegration of heaving shale during rotary drilling have been proposed. One suggestion involved the use of a high-pressure stream of air instead of mud for the removal of cuttings. The use of petroleum weighted with suspended finely ground oyster shell was tried in at least one hole but with little success. It has been observed that solutions of sodium chloride, sodium nitrate, calcium chloride and caustic soda do not alter some heaving shale samples and each of these has been used in at least one hole. The failure of these may be explained by the encounter of shales more subject to hydrous alteration than the samples that had been used in the laboratory test work.

It has now been found that silicate of soda is more effective than the other common electrolytes and that still further protection may be obtained with solutions containing both silicate of soda and another compatible electrolyte.

Small concentrations of silicate of soda have been used for years to deflocculate drilling muds, thus reducing their viscosity. When so used the chemical tends to disintegrate suspended shale cuttings rather than to preserve them. In the pottery industry the addition of a few tenths of a percent of the same silicate first proposed in this work is used daily to reduce clay filter cakes to a thin slip. It seemed strange that a higher concentration would have an opposite effect. To explore the matter further, a series of kaolin clay slips were made up, all carrying the same amount of clay, but differing amounts of silicate. The viscosities measured are plotted against percent silicate in Figure 3-a. It will be noted that small amounts of silicate lower the viscosity of the slips greatly, but that increasing concentrations gradually raise the viscosities higher than when no silicate is present. It thus appears that, whereas silicate of soda deflocculates clay at low concentrations, a reversal to a flocculating effect occurs in higher concentrations. To test the theory thus suggested, several different clays were obtained which were nearly free of calcium and magnesium. Air-dried lumps immersed in solutions of varying concentration behaved as predicted. In the lower concentrations they disintegrated immediately, increasing concentrations broke them down more slowly. In the higher concentrations they remained unaltered for months. The effect of concentration upon the stability of air-dried native kaolin is shown in Figure 3-b. Many shales behave in a similar manner, though the concentrations required to hold them may differ. It is thus indicated that the protection is at least partially explained by flocculation. The photograph emphasizes that any concen-

tration less than that required for a given shale is as bad as none at all.

Later work has shown that the protection offered to shale by silicate of soda cannot be completely explained by simple flocculation. Other strongly flocculating solutions are not equally effective. A piece of heaving shale after immersion in silicate of soda acts as if it had acquired a protective shell. When removed from the silicate solution and immersed in water it disintegrates less rapidly than it would have without the silicate treatment. If the treated piece is broken in two, however, the water attacks the new surface rapidly to leave only the shell of the original piece.

The first attempt to use silicate of soda in the drilling of heaving shale revealed that the problem was much more complex and less completely solved than had been hoped. In its simplest terms the problem was found to involve:

1. The formation of an aqueous solution which would hold unaltered any shale likely to be drilled and yet be as economical as possible.
2. The formulation of a drilling mud of desired characteristics based upon the effective aqueous solution.
3. The design and provision of field equipment.
4. Development of effective supervision and control methods during actual use.
5. Modification of drilling practices to meet the new limitations imposed.

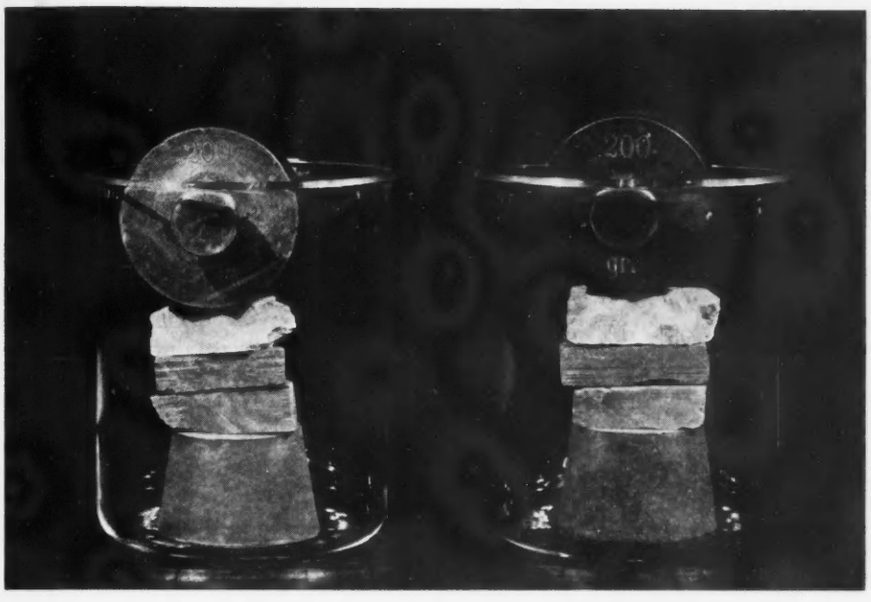


**FIGURE 2-a**
**Identical samples of heaving shale between layers of hard shale before immersion.**

**FIGURE 2-b**
**Same samples as above five minutes after contact with water (left) and silicate of soda (right).**

### The Formulation of a Protective Aqueous Solution

The first field operation with silicated mud produced samples of shale which were much more sensitive to water than anything that had previously been worked with and raised the question as to whether samples of the most reactive material might ever be obtained until the perfect method of control had been found. At least it seemed likely that we might anticipate still more sensitive shales than had so far been sampled.

**TABLE 1**

| GRADE | Percent $Na_2O$ | Percent $SiO_2$ | Ratio—Percent $SiO_2/Na_2O$ |
|---|---|---|---|
| "S" | 6.4 | 24.7 | 3.86 |
| "N" | 8.9 | 28.7 | 3.22 |
| "K" | 11.0 | 31.2 | 2.84 |
| "D" | 14.5 | 29.0 | 2.00 |
| "BW" | 19.4 | 30 6 | 1.58 |

In planning further laboratory studies, it was decided to explore the possible value of the other commercial silicates of soda. The ones chosen are listed in Table 1. The shale from the 7160-77 foot level of an early well was chosen for use in the major portion of the work, with the hope that information might thus be gained which could be extrapolated and then checked with the limited supply (some fifty grams from the 7384 foot level) of the most sensitive sample available.

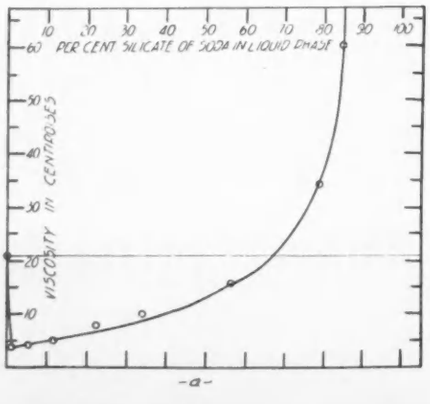
A series of solutions was made up covering the range from 10 to 100 volume percent of five of the silicates of soda. Samples of 7160-77 foot shale were sealed in each, maintained at 50° C., and their condition graded daily according to the following scheme, as illustrated in Figure 4. The pertinent data are given in Table 2.

The best graphical correlation of the data seemed to be that shown in Figure 5, where the one week ratings are plotted against percent

**TABLE 2**

**Condition of Heaving Shale Samples Immersed in Various Solutions of Sodium Silicate**

| GRADE OF SILICATE | Conc. Volume Percent | 1-Day Rating | 2-Day Rating | 3-Day Rating | 4-Day Rating | 5-Day Rating | 6-Day Rating | 1-Week Rating | FINAL OBSERVATION | | Weight Percent $SiO_2$ | Weight Percent Total Solids |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Time | Rating | | |
| "J" Brand | 10 | 3 | 3 | 1 | 1.5 | 1 | 1 | 1 | 2 Months | ... | 5.9 | 8.7 |
| | 20 | 4 | 4 | 3 | 2 | 2 | 2 | 2 | 2 Months | ... | 10.9 | 16.3 |
| | 30 | 6 | 6 | 4 | 4 | 4 | 4 | 4 | 2 Months | 4 | 15.3 | 23.0 |
| | 35 | 8 | 8 | 7 | 7 | 7 | 7 | 7 | 2 Months | 7 | 17.4 | 26.1 |
| | 40 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 2 Months | 10 | 19.4 | 29.0 |
| | 45 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 2 Months | 10 | 21.2 | 31.8 |
| | 50 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 2 Months | 10 | 22.9 | 34.4 |
| "K" Brand | 10 | 3 | 3 | 3 | 1.5 | 1 | 1 | 1 | 2 Months | ... | 4.4 | 5.9 |
| | 20 | 4 | 3.5 | 3.5 | 2 | 2 | 2 | 2 | 2 Months | ... | 9.4 | 11.4 |
| | 30 | 6 | 4 | 4 | 4 | 4 | 3.5 | 3 | 2 Months | ... | 12.1 | 16.4 |
| | 35 | 7 | 6 | 5.5 | 4.5 | 4.5 | 4 | 4 | 2 Months | ... | 13.8 | 18.5 |
| | 40 | 7 | 7 | 5.5 | 5 | 5 | 5 | 5 | 2 Months | ... | 15.5 | 20.9 |
| | 45 | 10 | 10 | 9 | 7 | 5.5 | 5 | 5 | 2 Months | 4 | 17.1 | 23.1 |
| | 50 | 10 | 10 | 10 | 10 | 7 | 7 | 6.5 | 2 Months | 4 | 18.6 | 25.2 |
| | 53 | 10 | 10 | 10 | 10 | 8 | 8 | 8 | 7 Weeks | 4 | 19.5 | 26.5 |
| | 60 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 7 Weeks | 4.5 | 21.5 | 29.1 |
| "N" Brand | 10 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 Months | ... | 3.8 | 5.0 |
| | 20 | 4 | 3.5 | 3.5 | 3 | 3 | 3 | 2 | 2 Months | ... | 7.4 | 9.7 |
| | 30 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 2 Months | ... | 10.7 | 14.1 |
| | 35 | 8 | 4.5 | 4.5 | 4.5 | 4.5 | 4 | 4 | 2 Months | ... | 12.3 | 16.1 |
| | 40 | 8 | 6 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 2 Months | ... | 13.8 | 18.1 |
| | 45 | 10 | 10 | 6 | 6 | 4.5 | 4.5 | 4.5 | 2 Months | 3 | 15.3 | 20.0 |
| | 50 | 10 | 10 | 6 | 6 | 5 | 5 | 4.5 | 2 Months | 3 | 16.7 | 21.9 |
| | 53 | 10 | 10 | 7 | 6.5 | 5 | 5 | 4.5 | 6 Weeks | ... | 17.5 | 22.9 |
| | 55 | 10 | 10 | 10 | 10 | 6 | 5 | 4.5 | 6 Weeks | 4.5 | 18.1 | 23.7 |
| | 60 | 10 | 10 | 10 | 10 | 9 | 8 | 6 | 6 Weeks | 6 | 19.4 | 25.5 |
| | 62 | 10 | 10 | 10 | 10 | 10 | 8 | 6 | 6 Weeks | ... | 19.9 | 25.9 |
| | 65 | 10 | 10 | 10 | 10 | 10 | 9 | 8 | 6 Weeks | 7.5 | 20.7 | 27.1 |
| | 70 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 6 Weeks | 10 | 21.9 | 28.7 |
| | 75 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 6 Weeks | 10 | 23.2 | 30.3 |
| | 80 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 6 Weeks | 10 | 24.3 | 31.8 |
| "S" Brand | 10 | 2.5 | 2.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 2 Months | ... | 3.1 | 3.9 |
| | 20 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 Months | ... | 6.1 | 7.6 |
| | 30 | 3.5 | 3.5 | 2 | 2 | 2 | 2 | 2 | 2 Months | ... | 8.8 | 11.1 |
| | 35 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 Months | ... | 10.2 | 12.8 |
| | 40 | 6 | 6 | 6 | 4.5 | 4 | 4 | 4 | 2 Months | ... | 11.5 | 14.4 |
| | 45 | 7 | 6.5 | 6.5 | 5 | 4.5 | 4.5 | 4.5 | 2 Months | ... | 12.7 | 16.0 |
| | 50 | 8 | 7 | 7 | 6 | 5 | 4.5 | 4.5 | 2 Months | ... | 13.9 | 17.6 |
| | 65 | 10 | 9 | 6 | 4.5 | 4.5 | 4.5 | 4.5 | 7 Weeks | 4.5 | 17.4 | 22.0 |
| | 75 | 10 | 10 | 10 | 10 | 9 | 9 | 9 | 7 Weeks | 9 | 19.4 | 24.8 |
| | 79 | 10 | 10 | 10 | 9 | 6 | 5 | 5 | 7 Weeks | 5 | 20.5 | 25.9 |
| | 90 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 7 Weeks | 9 | 22.8 | 28.7 |
| "BW" Brand | 30 | ... | 4 | 4 | 3 | 3 | 3 | 3 | 5 Weeks | 3 | 8.1 | 14.8 |
| | 35 | ... | 4 | 4 | 3 | 3 | 3 | 3 | 5 Weeks | 3 | 14.5 | 23.8 |
| | 40 | ... | 10 | 10 | 10 | 10 | 10 | 9 | 5 Weeks | 9 | 16.2 | 26.4 |
| | 45 | ... | 10 | 10 | 10 | 10 | 10 | 10 | 5 Weeks | 10 | 17.7 | 28.9 |
| | 52 | ... | 10 | 10 | 10 | 10 | 10 | 10 | 5 Weeks | 10 | 19.8 | 32.3 |




total solids for all the silicates. The deviation of some points from the curve is thought to be within the range of experimental error due to variations in the shale fragments.

The strong indication that the protective effect was dependent upon the total silicate solids concentration regardless of $\%SiO_2/\%Na_2O$ ratio was considered to be very important. While it appeared that a solution containing about 29% sodium silicate solids would "hold" this particular shale, it was realized that this work was done on the less sensitive shale sample. It still remained to find an effective protective medium for the sample from the 7384 foot level.

Choosing the "D" Brand silicate of soda, the effect of various con-

**FIGURE 3**

**The chart shows effect of silicate of soda concentration upon deflocculation of a kaolin suspension. Pictured below is the effect of silicate of soda concentration upon the stability of immersed samples of native kaolin.**

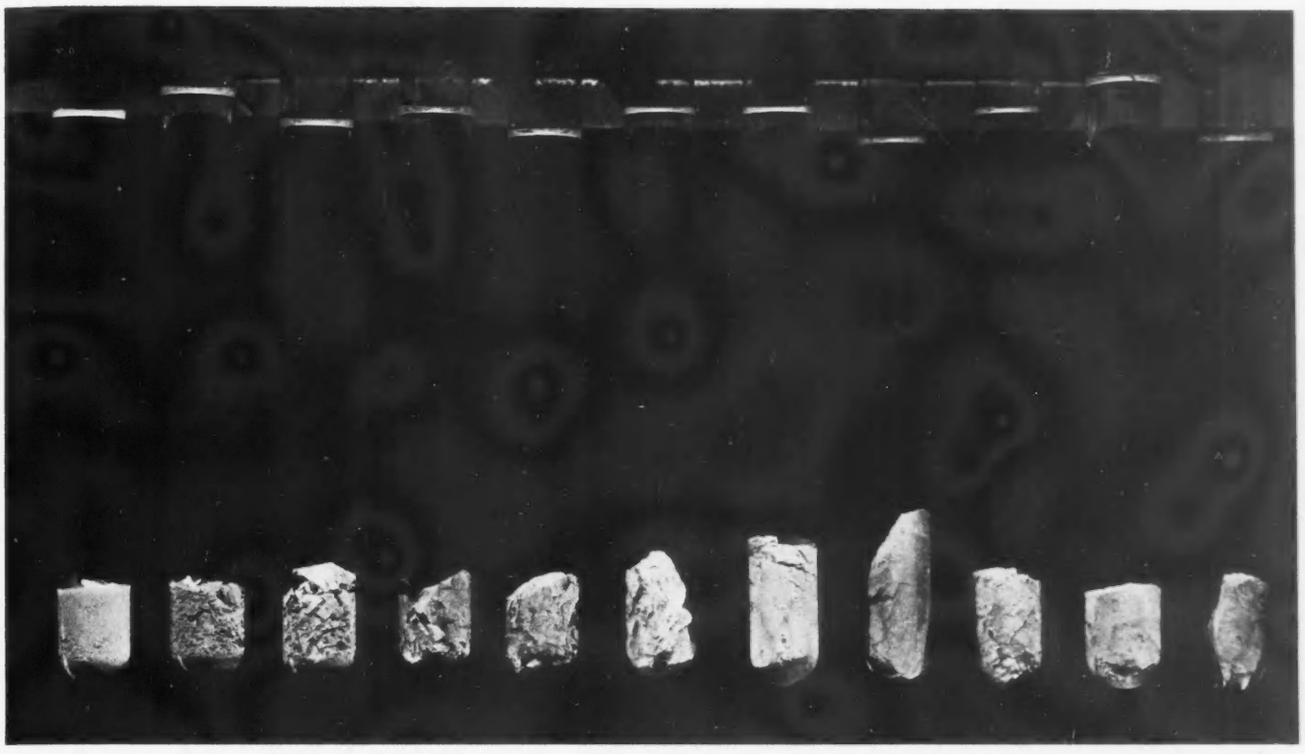


**FIGURE 4**

**Series of shale samples illustrating the method of rating after immersion in silicate of soda solutions. Reading from left to right, the rating is 0, 0-10.**

| Rating | CONDITION OF SHALE |
|---|---|
| 0 | Completely decomposed with swelling, etc. The condition produced by several hours in water. |
| 1 | Completely broken up into very small chips. No swelling. |
| 2 | Completely separated into large chips but with none of the chips large enough to even partially show the original shape. |
| 3 | Very badly cracked with from ¼ to ¾ of the sample separated into large chips and the remainder checked so badly as to be on the point of falling apart. |
| 4 | Badly cracked with most of sample retaining its original shape but showing a large number of cracks, some of which penetrate more than ½ the thickness of the sample. Very few chips. |
| 5 | Cracked with the surface showing many small cracks with one or two large ones but with entire sample held in its original shape and no chips or fine particles. |
| 6 | Some cracking. At least two large cracks or several surfaces checked with fine cracks. |
| 7 | Slight cracking. Fine cracks visible on two or more surfaces of the sample but no deep ones. |
| 8 | Very slight cracking. Only one surface of sample showing cracks and these very fine and few in number. |
| 9 | Cracking exceedingly slight. Cracks so fine and so few as to be visible only with close examination. |
| 10 | No visible change from original condition. |

centrations upon the more sensitive shale from the 7384 foot level was observed. Figure 6 shows their appearance after one week. A full 100% concentration was effective, but lower concentration permitted some cracking. The use of such a solution as the liquid phase in a drilling mud was considered impractical, for two reasons. First, it had too high a viscosity—260 centipoises, as compared to the usual maximum value of about 100 permitted in a drilling mud. Second, no possibility of providing a margin of safety for shales more sensitive than those yet worked with was indicated.

Other work had shown that the addition of certain compatible salts increased the effectiveness of a given concentration of silicate of soda. Accordingly, the value of various mixtures of saturated sodium chloride brine with the above-described silicate of soda solution were tried on the 7384 foot level shale. A solution comprising two volumes of the "D" Brand mixed with one volume of saturated sodium chloride brine, prevented alteration both at 20° and 75° C., the latter temperature approximating that of the shale in place. Even oven-dried samples remained unaltered. This solution was chosen as an aqueous solution for the protective silicate mud and was so used in the balance of the work here described.

In shallow drilling almost any fluid suspension of clay in water can be used as a drilling mud. With progressively deeper wells, however, the mud must be held to ever stricter requirements. The cost of continuously pumping the mud down the drill pipe to the bit and on out the hole becomes an appreciable item in a 10,000 foot hole and requires that the viscosity be held at a minimum. The mud must be thixotropic so that when circulation is stopped a gel will be formed which is sufficiently strong to hold the weighting material and rock cuttings in suspension and not allow them to fall to the bottom of the hole and hopelessly jam the bit. On the other hand the gel strength must be low enough so that circulation can be started up again with reasonable pump pressures. It is very important that the mud quickly form a thin impervious filter cake on the hole wall wherever a porous material is penetrated. The more quickly the filter cake is formed the smaller the loss of valuable mud into the formation. The clearance between the hole

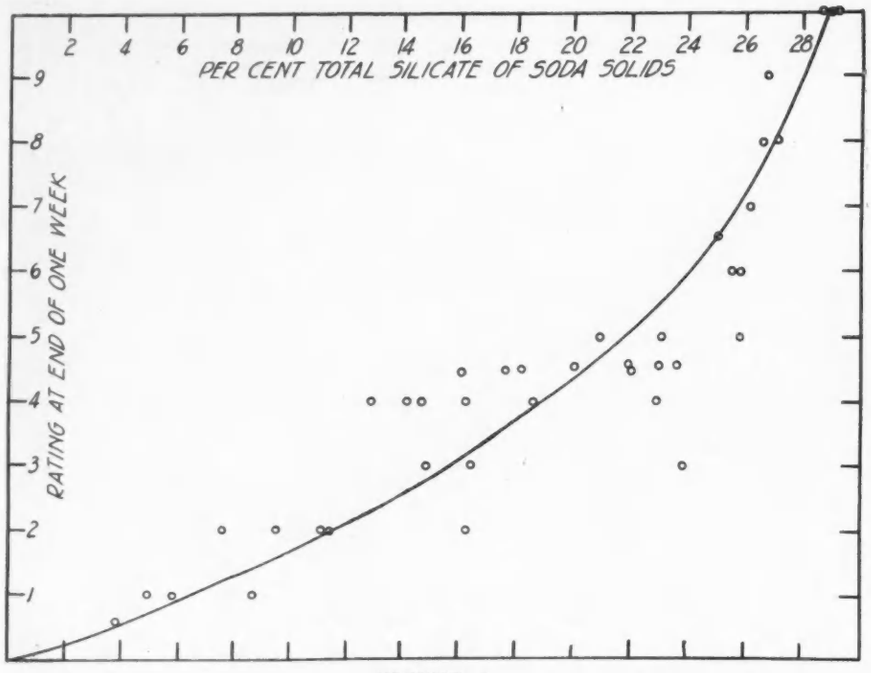



**FIGURE 5**

**Relationship between concentration of total silicate solids in solution and the degree of protection afforded a certain sample of shale.**

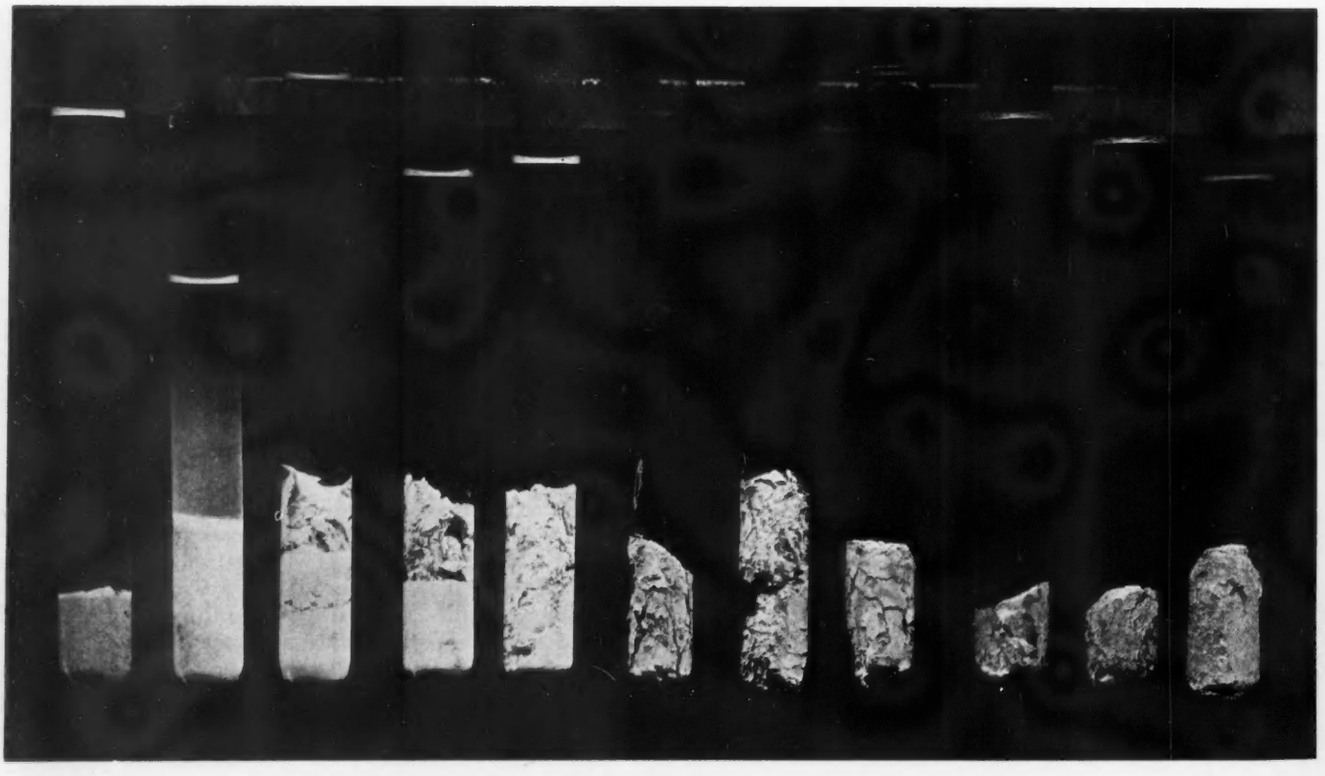
being drilled and the casing later to be run is often not more than an inch, so a thick filter cake cannot be tolerated. A mud which forms too thick a filter cake may be the cause of hopelessly repeated reaming and even of a stuck pipe. The mud must be adaptable to reconditioning for further use, that is, removal of rock cuttings and gas bubbles and readjustment of its physical characteristics when altered by materials drilled through.

The strongly flocculating character of the silicate solution required to hold the heaving shale, as contrasted with the deflocculating condition ordinarily maintained in drilling mud, presented special difficulties that were only solved through the perfection of measuring methods and considerable study.

The thixotropic gelling rate and the gel strength attained are perhaps the most important characteristics in a drilling mud. Some judgment of this characteristic may be made by shaking air bubbles into a jar of mud and then, holding the container in an inclined position, observing the maximum size of the bubbles which become locked in place by the gelling. The method of measurement finally found most useful involved the use of the Stormer Viscosimeter. The instrument is set where it can be free of vibration, and water of the desired temperature circulated through the jacket. The cup is filled with mud and allowed to come to temperature. The spindle is rotated rapidly for at least one hundred revolutions and then allowed to stand quiescent for the predetermined length of time. The applied weight in grams which will then just start and continue rotation of the spindle is taken as a measure of gel strength. A plot of gel strength versus time reveals

**FIGURE 6**

**Effect of "D" silicate of soda in concentrations (increasing in increments of 10 volume percent from zero on the left to 100 on the right) upon shale from the 8384 foot level after one week's exposure at 50° C.**



# WHERE ELSE COULD YOU FIND TAPERED ROLLER BEARINGS WITH SUCH A SENSATIONAL RECORD OF PERFORMANCE IN *Oil Field Equipment?*

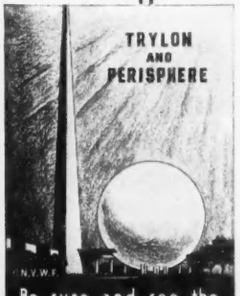
The only way to judge what a bearing is capable of doing is by what it has *done*. The performance record of TIMKEN Tapered Roller Bearings in oil field equipment is unapproached by that of any other bearing.

Engines equipped with TIMKEN Bearings have supplied power for the drilling of many of the world's deepest oil wells—including the current record holder (15,000 feet).

Timken Bearing Equipped swivels have safely carried and rotated the longest and heaviest strings of drill pipe.

Similarly TIMKEN Bearings in drawworks, rotaries, pumps, hoists, blocks and all other kinds of oil field equipment have demonstrated outstanding performance under the hardest conditions encountered in oil field service.

Granting that tapered roller bearings are the best for oil field equipment, you need TIMKEN Tapered Roller Bearings to make sure of getting maximum efficiency, endurance and life.




Be sure and see the TIMKEN exhibit in the Metals Building at the New York World's Fair.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Manufacturers of TIMKEN Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; TIMKEN Alloy Steels and Carbon and Alloy Seamless Tubing; TIMKEN Rock Bits; and TIMKEN Fuel Injection Equipment.

**TIMKEN**
**TAPERED ROLLER BEARINGS**

much regarding a drilling mud. This method is subject to criticism but gives reproducible results in experienced hands and permits the quantitative evaluation of drilling muds.

If dry, powdered clay is stirred into the strong "D" Brand—NaCl solution the resulting suspension has practically no gel strength. This at first seemed like an insuperable obstacle. Hydrating the clay in water before mixing with the silicate helped a little but bad setting out was experienced. The solution was finally found in the use of bentonite. This highly colloidal clay, when first suspended in water for about twenty-four hours and then mixed with the silicate, is very effective. Usually less than one percent in the final mud gives a gel of sufficient strength.

The strongly silicated and flocculated drilling muds here under consideration were found to develop their full gel strength in a matter of seconds instead of the minutes or hours required in an ordinary deflocculated mud. This is a real advantage because in the hole, when circulation is stopped, the fast forming gel seizes the suspended cuttings before they can start to fall. Not having acquired a downward velocity, a weaker gel suffices to hold them. On the other hand, when it is desired to start flow of the mud column again, this weaker gel permits the use of lower pump pressures. These muds also show a favorable increase in gel strength with increase in temperature, in contrast to the behavior of ordinary muds, which often show a dangerous drop in gel strength at bottom-hole temperatures. Furthermore the lowering of gel strength at surface temperatures facilitates the removal of gas and sand by sedimentation in the mud ditch.

The viscosity of drilling muds is most commonly measured by means of the Marsh funnel. The time in seconds required for a given volume to flow out of the funnel through a calibrated orifice is taken as a measure of the viscosity. No allowance for differences in specific gravity or thixotropy is ordinarily made, and the method finds its greatest value as a rough tool in the hands of the laborer. The most satisfactory instrument for laboratory use is the Stormer Viscosimeter, and a modified procedure must be used to eliminate error due to thixotropy. Provision should be made to hold the sample at well temperature as a misleading value will otherwise be obtained. The instrument is calibrated with standard glycerine solutions and a chart drawn relating viscosity in centipoises to the weight required to turn the rotor at 600 R.P.M. In measuring a mud, the operator tries one weight after another until one is found which gives a speed of 600 R.P.M. on three successive runs. The repeated stirring of the sample is considered of value in removing any latent gelation.

A solution comprising a mixture of two volumes of "D" Brand silicate of soda with one volume of saturated sodium chloride solution has a viscosity of about 29 centipoises at 30° C. This sets a lower limit on the attainable viscosity in the mud. The upper limit is set by the amount and character of the suspended solids required to give the desired gel strength and specific gravity. It is usually not difficult to achieve a viscosity as low as 50 to 60 centipoises.

Ordinary drilling mud tends to become more viscous with use due to solids picked up from the drilling, and it is common practice to cut back the viscosity with either water or a fraction of a percent of deflocculating agent. The only effective means of reducing the viscosity of the protective silicate muds is by good settling of rock particles and dilution with the silicate—NaCl solution required as an aqueous phase. It was feared at first that this would be an economic handicap, but experience has shown that it is seldom necessary to add more liquid phase than is required to compensate for the new hole drilled. This, of course, should have been expected from the fact that the aqueous phase was designed to prevent dispersion of the shales drilled through.

The attainment of any reasonable specific gravity in the mud presented no difficulty. Sample muds prepared with pulverized barytes, iron oxide or silica showed no significant change in measurable characteristics after storing for a month at 90° C. Muds weighing up to 16 pounds per gallon have been successfully built and used in the field.

Trouble was anticipated with the building of a mud which would quickly form a thin impervious filter cake on the wall of the hole because flocculated clay suspensions, as a rule, tend to form thick pervious filter cakes.

A preliminary test method was devised of placing 40 ml. of the mud in a number 40 Whatman filter paper held in a standard 60° long stem filter funnel and observing the rate of filtrate accumulation. Experience has shown that a cessation of flow in 24 hours or less with a total filtrate volume of less than 12 ml. indicates a mud which is likely to give satisfactory performance in the hole. Such a test has continued to be used in the field. Recently more refined tests have been made using a flat filter disc and pressure of one hundred or more pounds per square inch. This method has the advantage of greater speed and more exact duplication of the conditions ambient in the hole, but due to the nature of the equipment required is best suited to laboratory studies.

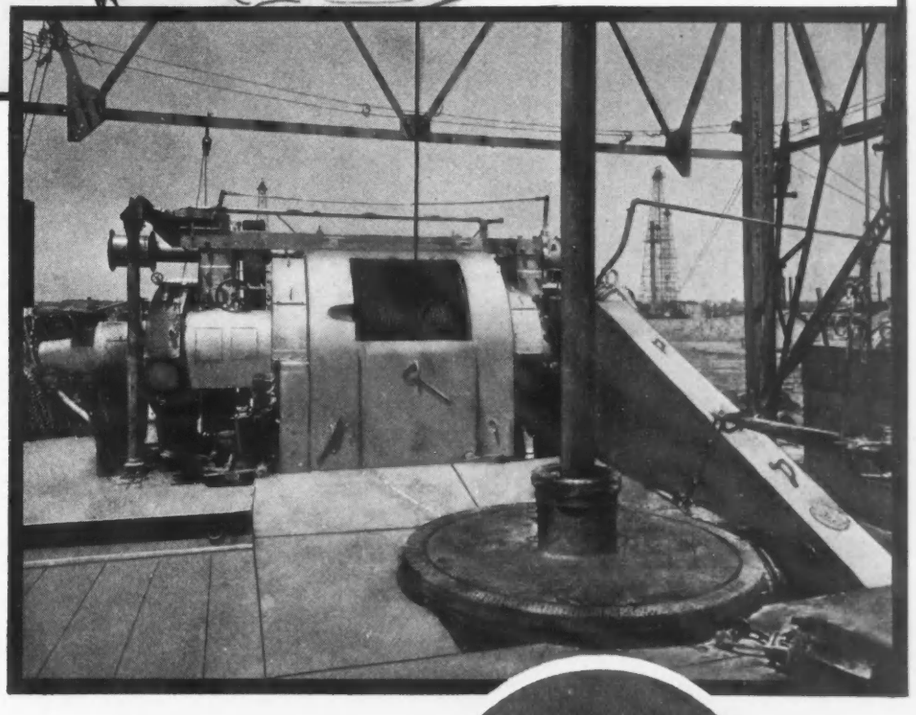
The problem in its simplest terms resolved itself into that of providing a proper distribution of solid particle sizes in the mud. In the early wells the right particle sizes were obtained by using properly ground minerals. It was later found that the water-mud built up in drilling the formation above the heaving shale provides nearly the right proportion of different particle sizes, and that the needed adjustment can be accomplished by the addition of dry pulverized bentonite directly to the silicate mud.

The "D" Brand silicate chosen for this work was known to be highly reactive not only with di- and poly-valent cations, but also with certain solid minerals likely to occur in the shales being drilled, and it was feared that unfavorable changes in the mud characteristics were likely to occur in the hole. To evaluate these dangers a systematic laboratory study of all known factors, requiring several months' time, was undertaken. Muds were made up covering all practical combinations of the "D" silicate-NaCl solution with commercial mud-making clays, weighting materials, and many pulverized samples of shales. Concentrations of single materials and combinations of them were correlated with resultant mud properties such as viscosity, gel strength, gel rate, filter caking behavior, and settling characteristics.

For the most part, these experimental muds were stored for a month at 90° C. and their behavior during, and their characteristics after this treatment observed and measured. The guidance afforded by this work has proved invaluable. The outstanding revelation of this work was that the sili-

# "Oh, bury me DEEP in the lone prair-rie"

*Ideco Big Giant draw works, reinforced with Nickel in all vital parts, drilling deep in a Texas field.*



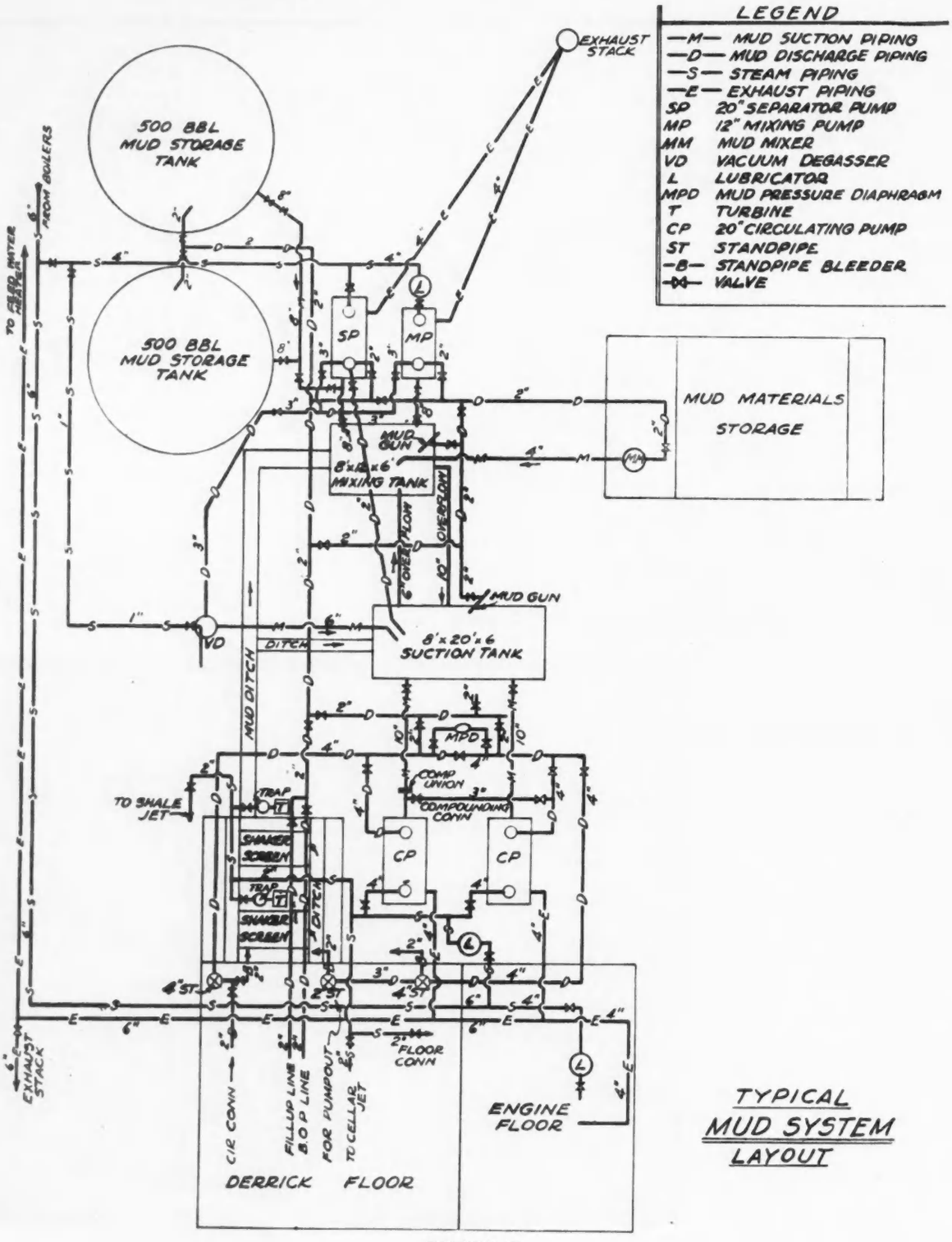
FROM deeper and deeper wells comes Texas and Gulf Coast production. With more wells passing the 10,000 ft. mark, drilling equipment must be engineered to rotate, hoist and control strings of tools nearly three miles long.

Ideco Big Giant draw works are designed by the International Derrick and Equipment Co., Beaumont, for 25,000 ft. levels. To withstand stresses, shock loads and abrasive wear inescapable in deep drilling, all Ideco cast steel parts are Nickel-chromium, similar to SAE 3140. Sprockets, clutches, drums and bearing boxes fabricated from this 1.25-1.75% Nickel steel are normalized and tempered to a tensile strength of 110,000 p.s.i.

Ideco draw works shafting is forged from Nickel-chromium steel. High carbon Nickel-molybdenum steel is used for brake bands. The high elastic limit Nickel steel bands instantly hold plunging tons of tools without deformation or change in shape. To save money, to avoid shut-downs, specify extra strong, extra tough Nickel alloys for new and replacement parts.

ALLOY
**NICKEL**
STEELS

**THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.**




TYPICAL MUD SYSTEM LAYOUT

**FIGURE 7**

cate—NaCl muds are outstandingly resistant to change. This has been amply confirmed in the later field work and may yet prove sufficient reason for using them even when heaving shale is not encountered.

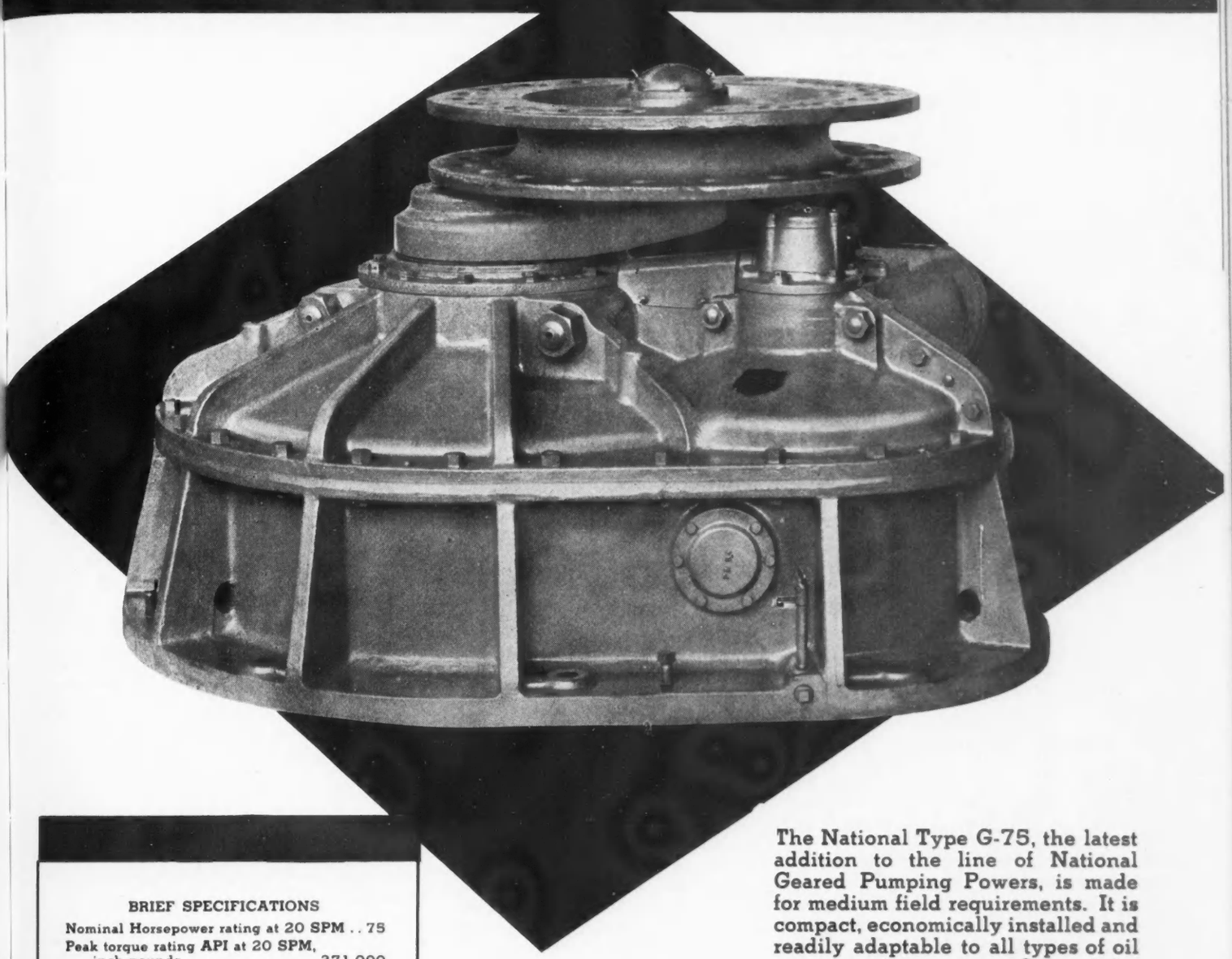
### Location of Heaving Shale in the Well

The present field practice and equipment has been evolving through experience with seventeen wells to date. Space here does not permit a detailed narrative of these cases, but an attempt will be made to describe present preferred practice.

It is first necessary to locate the top of the heaving shale. Its approximate position may be known from experience with adjacent wells. In any case, two practices should be adopted at least two thousand feet above its anticipated level. First, frequent cores should be taken and before any evaporation has occurred representative samples should be shaved free of mud and other contamination and preserved in air tight containers. Representative portions of these should be immersed in companion test tubes, one charged with water and the other with a solution comprising 2 volumes of "D" Brand plus one volume of saturated so-

# A *New* NATIONAL GEARED POWER

## The Type G-75 for Medium Field Requirements



**BRIEF SPECIFICATIONS**

| | |
|---|---|
| Nominal Horsepower rating at 20 SPM | 75 |
| Peak torque rating API at 20 SPM, inch pounds | 371,000 |
| Stroke length regular, inches | 30 |
| Overall gear ratio | 20.9 |
| Number of holes for connections | 20 |

The National Type G-75, the latest addition to the line of National Geared Pumping Powers, is made for medium field requirements. It is compact, economically installed and readily adaptable to all types of oil country prime movers. General design is the same as that of the Types G-30, G-50, and G-100 National Geared Powers.

# NATIONAL

EXECUTIVE OFFICES: PITTSBURGH, PA.
GENERAL SALES OFFICE:
TOLEDO, OHIO

DIVISION OFFICES:
FT. WORTH, TEXAS; TULSA, OKLA.;
TORRANCE, CALIF.

**THE NATIONAL SUPPLY COMPANY**

dium chloride brine. These test tubes should be carefully labeled and preserved. Any cracking, swelling or disintegration of the samples in the water is warning that heaving shale has been tapped. Second, a careful record should be kept of mud characteristics, drilling progress and any additions made to the mud. A decided increase in the mud viscosity is a real danger signal, and should be checked by taking a core immediately and performing the test tube test. An agreement in these tests is taken as proof that the heaving shale has been tapped.

It cannot be too strongly emphasized that once heaving shale has been reached further drilling should be stopped and a change to protective silicate mud made before resuming drilling. In altogether too many cases the operator is inclined to go on only to find after 24 to 48 hours that he is in serious trouble. With several hundred feet of heaving shale hole thus messed up and water soaked, further progress even with silicate mud becomes an expensive, nerve wracking and often questionable problem.

It is a good plan at this stage to spend a few days in overhauling the equipment and making any needed changes in the surface mud handling system. This can usually be done while the silicate mud is being prepared.

### Field Equipment for Handling Protective Silicate Mud

The relatively higher cost of silicated mud justifies more care in its conservation than the muds used in most deep drilling practice. It has been found profitable to install catch basins underneath the derrick floor to salvage the mud released from pipe sections as removed from the hole. It is important to avoid unnecessary dilution with water. Shaker screen, settling ditch, and storage pits should be covered to exclude rain. In one case, the conventional unlined earthen mud pits have been replaced with steel tanks to avoid earth contamination and seepage losses. It is usually more economical, however, to use rectangular vertical-sided pits lined with planking backed up with tamped clayey earth.

The fast gel rate of silicate mud requires that more than usual pains be taken in the removal of gas and the small rock particles which pass the screens. Quite satisfactory results have been obtained through the use of baffled mud ditch 160 feet long, two feet wide, with a three foot fall, and a set of submerged mud guns in the suction pit. One company has had success with a degasser evacuated by a steam jet. Some work has been done with a continuous centrifuge for removing the fine particles. While these machines are to be considered as auxiliary, they are no doubt useful.

A typical good surface mud system layout is shown in horizontal projection in Figure 7. In normal drilling operation the mud returning from the hole flows over the two shale shaker screens, where the coarse rock particles are removed, down the baffled mud trough or ditch for partial removal of gas and sand, into the mixing pit and by overflow into the suction pit. In each tank the mud is kept in motion with mud guns to prevent gelation and release further gas and sand. From the suction tank the mud is picked up by the circulating pumps and pumped down the drill pipe to the bit, from whence it carries its load of cuttings to the surface. Make-up materials are mixed with a stream of mud at the materials storage shed using a jet type mixer. On the illustrated job a vacuum gas separator with hydraulic leg was used and a small stream of mud continuously circulated from the mixing pit through it for degassing and then to the suction pit.

### Preparation of the Mud

The formulation of the silicate mud presents a different problem on each well. The object in every case, however, is to achieve at minimum cost a volume of mud having the desired characteristics. It is usually possible to salvage a large portion of the valuable clays and weighting materials from the discarded water-mud. The present procedure is as follows:

A series of mixtures is prepared from the mud on hand, the chemicals required, and water to give the desired concentrations in the aqueous phase. These experimental muds are then measured before and after 24 hours heating at bottom-hole temperature. This permits evaluation of the unknown constituents in the mud and a determination of the amount of the old mud which can be used. Other series of tests reveal the quantities of other materials which must be added to attain the desired properties.

In a typical case the following materials were used at the well:

| | | |
|---|---|---|
| Old water mud | 37.1 | wt. % |
| Water | 28.0 | " " |
| Silicate of soda (anhydrous basis) | 22.2 | " " |
| Sodium chloride | 5.1 | " " |
| Weighting material | 7.5 | " " |
| Bentonite | 0.1 | " " |

which yielded a mud with the following characteristics:

| | |
|---|---|
| Weight | 13.1 lbs./gal. |
| Viscosity | 38.5 centipoises |
| Gel strength | 5.0 gms. |
| Filter test | 8.5 ml. in 24 hours |

The silicate mud is made up by measuring the old mud into the mixing pit and then adding the water at the mixer. The silicate, salt, bentonite and weighting materials are then added successively and the mud circulated until the soluble constituents are dissolved. This new mud is then circulated in the hole or otherwise heated to develop its full gel strength. Displacement of the water mud in the hole will result in the removal of the filter cake from the wall of any uncased hole and an allowance must be made for this material when formulating the silicate mud.

### Drilling Practice

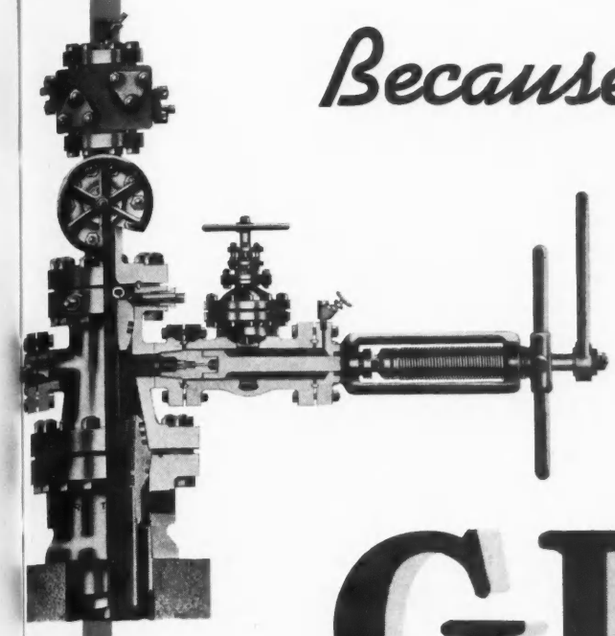
The use of silicate mud requires no departure from conventional drilling practice except in a few details. Protective silicate mud, if properly controlled, will neither build a thick filter cake nor permit the hole to constrict by swelling of the shale. It is wise to keep always in mind that the shale is protected from disintegration whether in the hole wall or suspended in the mud. Shale particles do not break up in the mud stream. (See Figure 8.) As large clearances as possible should, therefore, be allowed between the drill pipe and set casing with special attention to avoid close clearances at tool points, pipe protectors, back off joints, etc. Especial care must be taken to avoid swabbing of the hole.

### General

Protective silicate mud differs in many ways from a straight water vehicle mud. Many unpredicted problems have been brought to light, each in its turn requiring prompt attention. Their occurrence has required the constant attendance on location of a specially trained chemical engineer, and it is doubtful if this service can be eliminated.

One of the writers returned to a drilling job from lunch one day to learn of plans to pump down a volume of Portland cement slurry to cement the bottom of a string of casing, using silicated mud in direct contact, immediately ahead

# The Real McCoy



*Because* we are regularly removing valves from oil wells ... under equalized pressure

# GRAY

## VALVE REMOVAL

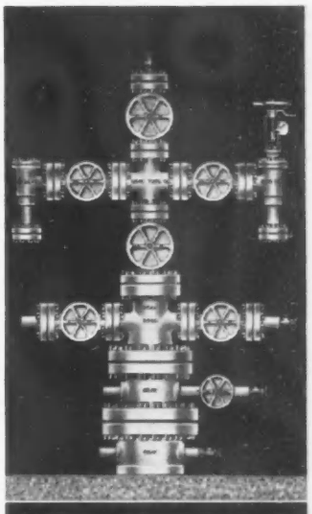
*under*

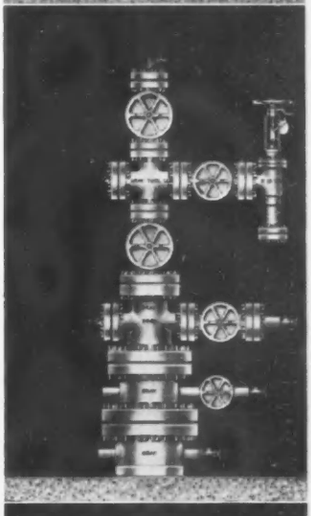
## EQUALIZED PRESSURE

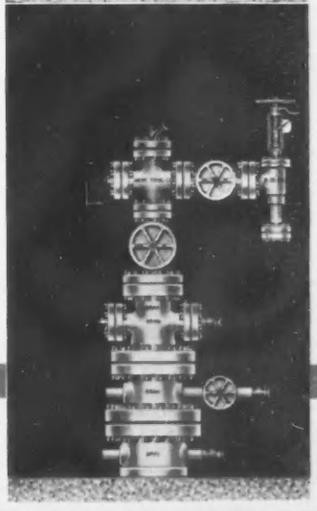
Pioneered . . . developed . . . and perfected . . .

- ★ TO REPAIR DAMAGED OR LEAKY VALVES WITHOUT KILLING THE WELL
- ★ TO REMOVE EXCESS VALVES FOR USE ELSEWHERE
- ★ TO REPLACE OBSOLETE PARTS WITH IMPROVEMENTS
- ★ TO INSTALL ADDITIONAL VALVES AND FITTINGS SHOULD THEY BE REQUIRED

**PROVED BY OVER 275 VALVES REMOVED IN ELEVEN FIELDS ON THE LEASES OF THIRTEEN COMPANIES under pressures ranging up to and above 3,000 lbs. per sq. in.**







**THIS SERVICE IS AVAILABLE ONLY WITH GRAY SYSTEMS OF WELL CONTROL**

# GRAY

## TOOL COMPANY

**HOUSTON – TEXAS**

and behind the cement. It took less than half an hour to convince the superintendent by demonstration that the contact with silicate of soda would result in a quick and disastrous setting of the cement.

**FIGURE 8**

**Bit cuttings of heaving shale drilled with protective silicate mud. The sharp preservation of bit marks and pressure folds show that no hydrous alteration has occurred.**

The problem was handled by interspersing a slug of water immediately ahead of and behind the cement. This and subsequent cement jobs have been successfully handled by using this technique.

Many of the operations around a drilling job are of such a nature that the crew are sometimes showered or otherwise wet with mud. Protective silicate mud will irritate the skin if left in contact for any great length of time, and particularly where subjected to rubbing by the clothing such as under neck and wrist-bands, belts, and shoe tops. The hands are relatively unaffected. Silicate introduced into the eye is a very painful experience. No serious effect has ever been reported, but a workman may have a rather sore eye for a few days unless the alkali is fairly promptly washed out with copious quantities of water.

Oil men feared for a long time that the use of silicate mud would permanently seal off any oil sands drilled with it. This fear has been proved groundless in the light of established and continued production from wells drilled with this mud.

The electric logging method of electrically surveying a bore hole to locate any possible productive sands is widely used. The method depends upon differences in the electrical resistance of various strata. It has been feared that silicate mud would prove troublesome because of its high electrical conductivity, and water mud was replaced in one hole before making such a survey. A recent survey in a hole while still filled with silicate mud clearly indicated an oil sand which was not logged in the drilling, and the well is now a good producer from this level.

Silicate mud is remarkable in its resistance to change by the materials drilled through. Salt is the bane of the engineer dealing with water mud because of its strong flocculating effect. Drilling through anhydrite or gypsum is likewise troublesome. In contradistinction to the sensitivity of water mud, hundreds of feet of solid salt have been drilled through with silicate mud with no appreciable change in its characteristics.

When drilling shales and particularly the softer ones, a water mud increases in viscosity more or less rapidly due to the hydration and dispersion of the clay-like material. This effect can be counteracted to a degree by the addition of peptizing agents and other chemicals in small amounts, but, in heaving shales, thinning with water invariably becomes necessary. Protective silicate mud will not permit the dispersion of the shale cuttings. It is seldom necessary to add liquid to silicate mud in greater quantity than is required to make up for mechanical losses and the increased volume required to fill the new hole drilled. The same batch of silicate mud has been used in drilling the heaving shale sections in four wells, including the drilling of several hundred feet of salt and anhydrite and the placing of several cement plugs. In each case the mud has been recovered from the hole after completion. The final total increase in volume over that needed for operating was less than one thousand barrels.

There is an indirect economy in the use of silicate drilling mud which has not as yet been fully evaluated. Due to the small amount of liquid addition required to control viscosity, the weighting material requirement is substantially limited to the volume of mud needed for drilling. In contrast to this, the necessary water dilution to control the viscosity of water-mud requires, in deep wells, the addition of corresponding quantities of weighting material. The investment thus made in expensive weighted mud in excess of what can be utilized has been known to run into tens of thousands of dollars on some wells.

The protective silicate mud technique here reviewed provides an opportunity to avoid hydrous alteration of heaving shale during and after drilling. It cannot be expected to correct the damage done by unwisely drilling part of the sensitive shale with water mud, nor to escape the penalty for mechanical mistakes in drilling. Properly and intelligently applied, the method can be depended upon to prevent heaving caused by hydrous disintegration.

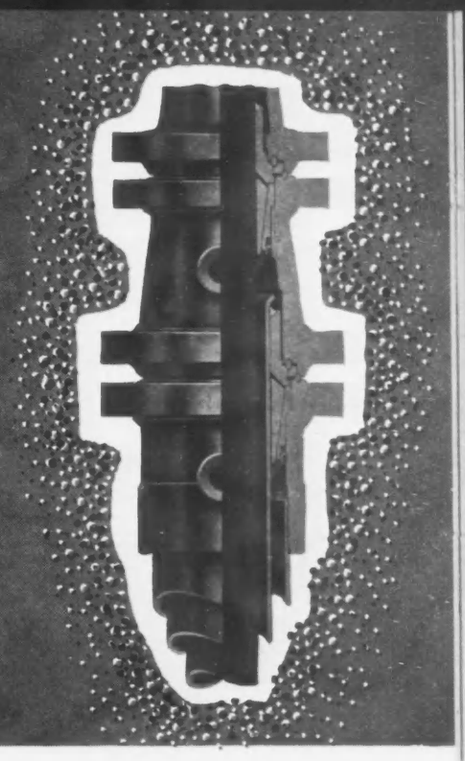
### Acknowledgment

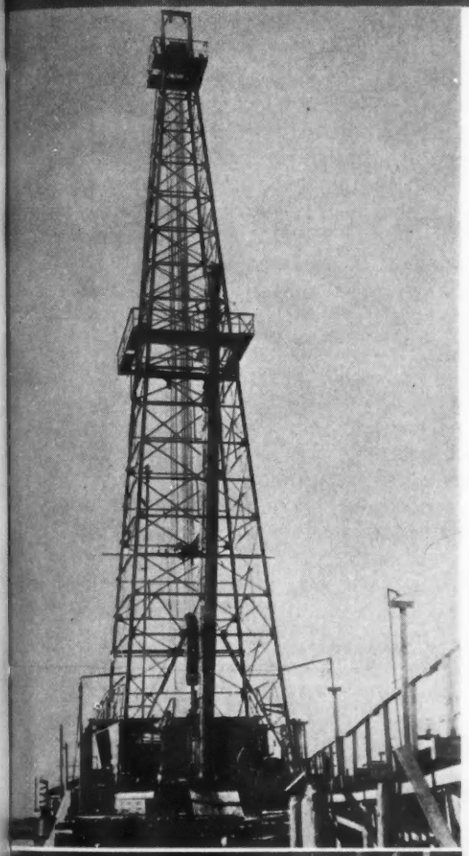
The progress herein reported is the work of many people with whom the authors have had the privilege of cooperating. Grateful acknowledgment is especially made to William V. Vietti, who early sponsored and helped carry on the work, to E. W. Louden, Orien Van Dyke and Harry L. Bolton, who by their efforts have made substantial contributions, and to the several oil companies whose patient money has made the work possible.

# –so Dick Blackstock Reported:

# "...11,631 Feet 9⅝" O.D.-43.50 lb. SURFACE PIPE SET & CEMENTED"

## -on a CAMERON type "c" CASING HEAD HOUSING





ABOVE — No. 2 State, Horseshoe Bayou, coastal Louisiana . . . a water-located operation being drilled with a submersible barge and extra-heavy duty equipment throughout.

LEFT — A 13⅜" Cameron Type SDA Series 900 API—6,000 lbs. test — Pressure Operated Blowout Preventer and Type DV Series 900 API —6,000 lbs. test—Pressure Operated Flowline Valve installed on No. 2 State.

The recent successful setting and cementing of 11,631 feet of 9⅝" O.D. 43.50 lb. casing in No. 2 State at Horseshoe Bayou, St. Mary Parish, Louisiana, established a new record for casing strings larger than 7" O.D. and demonstrated the advantages of design and construction of the Cameron Type "C" Slip Suspension Casing Head.

With 13⅜" O.D. pipe set and cemented at 1,859 feet, the hole was drilled to 11,644 feet through a Cameron Type SDA Series 900 API — 6,000 lbs. test — Pressure Operated Blowout Preventer flanged above a Cameron Type "C" Casing Head Housing. Walls of the 9,785 feet of open hole below the 13⅜" O.D. casing were kept in such excellent condition that the operator experienced little or no difficulty in running the record string of 9⅝" O.D. casing to bottom. After cement had set, stretch was taken in the string and it was then suspended on slips in the casing head housing. The last joint of casing was cut off with a torch a few inches above the slips and was welded to an auxiliary welding hanger, a part of the slip suspension assembly. At this point, a Cameron Type "C" Casing Head Spool, equipped with the unique FLEX-STEEL Multi-Ring Gasket Assembly, was flanged above the Type "C" Casing Head Housing to provide a leak-proof seal between the casing strings and between the flanges of the housing and spool. Neither seal was dependent upon weight of the casing string, both being controlled entirely by the flange studs.

With blowout preventer equipment flanged above the Cameron Type "C" Casing Head Spool, drilling operations were resumed on this deep test well with the hope of discovering a new, deeper producing horizon in coastal Louisiana.

Full descriptive literature will be gladly mailed on request to operators who are interested in the constructional features of the Cameron Type "C" Casing Heads.

## CAMERON IRON WORKS, INC.

711 MILBY STREET, HOUSTON, TEXAS

EXPORT: 74 Trinity Place, New York, N. Y.

# Automobile Accidents To the Oil

No industry has a greater stake in the future of automotive transportation than the petroleum industry. The 29,650,000 odd motor vehicles operating on the streets and highways in the United States last year consumed a large portion of the refined products processed by the industry. It is estimated that over four hundred and forty million barrels of gasoline were consumed by cars and trucks — not to mention the thousands of gallons of lubricating oils and tons of grease necessary to the safe and efficient operation of this vast array of motorized equipment. Consumption of petroleum products in this field increases year by year as the number of vehicles increase. New highways are constantly being built and old roads improved, further increasing travel by adding to the convenience of pleasure motoring and making commercial hauling more economical.

It is obvious, considering the tremendous volume of revenue derived by the industry from the sale of gasoline, lubricating oils and greases, to the motoring public, that any factor threatening to curtail automotive travel and transportation endangers the future of the industry.

Despite yearly increases in sales through service station outlets, and perhaps to the surprise of many even within the industry, such a danger does threaten in the form of the terrific toll extracted annually on the highways of the United States because of accidents.

Considering these facts, the accompanying article on the seriousness of the automobile accident problem and what many oil and gas companies are doing in the interest of safe operation of their own fleets is most timely.

THE rising tide of automobile accidents continued for several years without arousing concern except among those civic minded groups interested in accident prevention and traffic enforcement officials. The press and the radio have been largely instrumental during the past two years, however, in awakening public interest in the problem of traffic accidents, and when in 1937 an all-time high of 39,500 motor vehicle deaths were reported, it became apparent to even the most casual observer that something had to be done to stop such needless and wholesale slaughter.

This arousing of the public consciousness to the seriousness of the traffic problem is the first essential in the program of effective control of automobile accidents, and it is most encouraging to enforcement officials and prevention agencies. As is usually the case when public opinion is suddenly aroused and attention focused on a problem that so seriously threatens the welfare of the people as does this problem of automobile accidents, many hasty and false conclusions are reached and the remedies recommended to law making bodies and enforcement officials are often ill founded and unwise. This is the danger that has and is threatening the petroleum industry today in connection with the street and highway traffic problem. Proposals have been made to require the automobile manufacturer to design his equipment so as to control speed at a maximum of 60, 50 and even 40 miles per hour.

### Fast Driving

Fast driving has been indicted in classifying automobile accident causes, but those individuals who point the finger of guilt to this

# Are Challenge Industry

By C. L. HIGHTOWER, Safety Director
United Gas Pipe Line Company

cause factor do not tell the whole story. Speed is relative. Sometimes 15 miles an hour is too fast and often times 60 miles an hour can be negotiated with a full measure of safety. It depends on conditions —the road, volume of traffic, weather, condition of the vehicle and the ability of the driver. Whenever an accident is charged to speed it does not mean the driver responsible was exceeding the speed limit but, rather, that he was driving too fast for safety under the conditions that existed at the time and place of the accident. In analyzing this fact we can readily see that we can not control accidents by merely controlling the top speed of the vehicle. The cause points to the operator and indicates the need of attacking the problem from the driver rather than the vehicle angle.

In addition to this recommendation for the control of top speed by the designer and manufacturer there have been many other hastily formulated and questionable theories advanced for the control of automobile accidents, and most of them are not only impracticable from the standpoint of getting results but would be definitely harmful in that they would curtail automotive travel through the establishment of excessively expensive and foolish requirements.

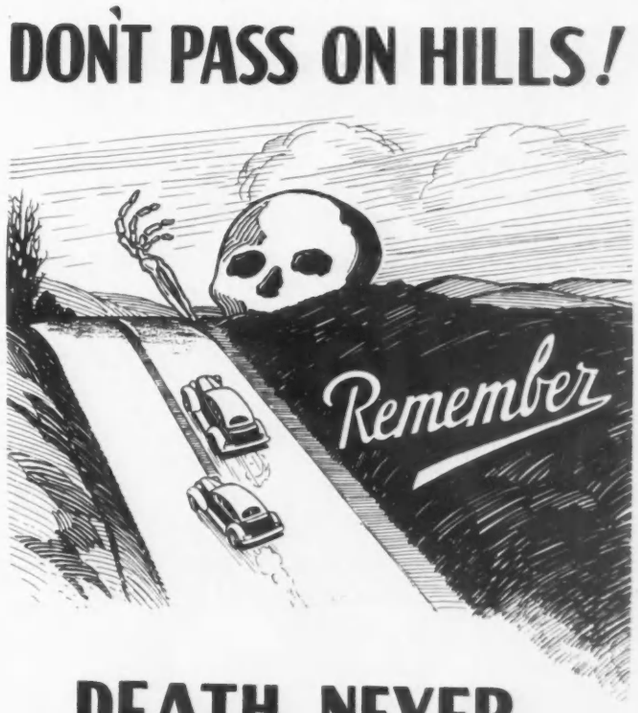
We must recognize that we have speeded up our mode of living. Compare production schedules of today to those of 20 years ago in any manufacturing process. Can we afford to go back to manufacturing methods of two decades past? Transportation has merely speeded up to keep in step with our industrial and social tempo. To slow up transportation would throw the entire picture out of balance and, to be frank, is impossible. We can not escape the fact, however, that the automobile as operated today is a menace to human life and certainly we must realize that such a condition can not be permitted to continue. Traffic accidents must be controlled and they can be, in a sensible, practical way without harmful effects to the automotive or transportation industries. The petroleum industry, because of its economic interest in the future of automotive transportation, should take the lead in the traffic safety field.

The records show that many individual companies within the industry have done an outstanding job in getting their own house in order. This is evident by the following comparison of the record of 79 oil and gas companies who reported their 1937 expense to the American Petroleum Institute with that of a group of commercial vehicle operators participating in the National Safety Council contest:

| | Number of Miles Traveled | Number of Accidents Per 100,000 Miles |
|---|---|---|
| Oil and Gas Companies | 816,566,086 | 1.45 |
| Other Commercial Vehicle Operators | 783,540,000 | 2.39 |

The fleet safety program of the average oil and gas company embraces these five fundamental factors:

1. Selection of qualified drivers.
2. Periodic mechanical inspections.
3. Continuous training of drivers in safe practices.
4. Thorough investigation of ac-




**Employees participate in automobile accident prevention program by submitting poster ideas in monthly contests.**

# Complete

## the REED Kor-King CONVENTIONAL CORE DRILL

- LARGER DIAMETER CORES
- FLOATING TYPE CORE BARREL
- FLOATING TYPE CORE CATCHERS—TOGGLE, OR COMBINATION SPRING AND TOGGLE TYPES
- OUTSIDE VENT—RELEASING THE PRESSURE ABOVE THE CORE
- CORE CATCHER PROTECTOR
- HARD AND SOFT FORMATION CUTTER HEADS INTERCHANGEABLE ON THE SAME SIZE CORE DRILL
- CORE DRILL ELEVATOR—ELIMINATING HANDLING WITH CATLINE

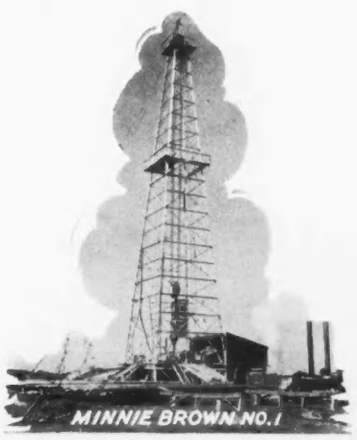
The REED Kor-King Core Drill Broke the World's Record for Conventional Core Drills.

P. O. BOX 2119 REED ROLLER

# Coring Service

## the REED "BR" Wire Line CORING-DRILLING OUTFIT

- ELIMINATES MANY ROUND TRIPS OF THE DRILL PIPE — PROTECTS WALL OF HOLE — SAVES MUD, FUEL, AND RIG MAINTENANCE COSTS
- ROTATION OF DRILL PIPE MAY BE MAINTAINED WHILE RECOVERING CORE OR CENTER BIT ASSEMBLY
- DESIGNED FOR SUCCESSFUL OPERATION IN LARGE DIAMETER HOLES AS WELL AS REDUCED DIAMETER HOLES FOR "RAT-HOLING AHEAD"
- COMPACTNESS AND LIGHT WEIGHT MAKES OUTFIT IDEAL FOR USE ON MOST REMOTE LOCATIONS
- HAS DRILLED MORE THAN 4½ MILLION FEET OF HOLE IN BOTH HARD AND SOFT FORMATIONS




The REED "BR" Wire Line Coring-Drilling Outfit Broke the World's Record for Wire Line Core Drills.

R BIT COMPANY HOUSTON, TEXAS

cidents and application of corrective measures for each individual case.

5. Recognition of good safe driving records of operating units and individuals.

Where a large group of vehicles are operated out of a central point the problem of selecting qualified drivers is materially simplified, as a definite procedure can be set up providing for testing applicants under actual road conditions. It is not such an easy matter to carry out such a plan where equipment is scattered and each supervisor employs his own drivers as they are needed. The same is true in using testing equipment such as reactometers, peripherometers, etc. These are practical where driver applicants are interviewed in large numbers at a central location but it is impracticable from an economic standpoint to provide such equipment at isolated points where only a few drivers are employed each year.

The first test the driver must successfully pass is the physical examination. He must be in good health, free of defects and deformities and, above everything else, possess good eyesight. Stress is placed on color blindness as obviously the driver who is unable to distinguish red from green is a definite hazard. Some companies supplement the pre-employment examination with periodic eye tests for drivers. With the aid of telebinocular equipment these eye tests can be given by laymen with an astonishing degree of accuracy and at very little expense. Drivers who are found with failing eyesight or specific vision defects are given an opportunity to correct the condition with the aid of glasses or treatment where possible and are permitted to continue on the job. Where the condition is of such nature or seriousness that it can not be so corrected the man is transferred to a class of work that does not require him to operate a motor vehicle.

### Human Element Tests

On taking the road test the applicant is graded on these points:

1. Mental alertness.
2. Ability to appraise existing conditions and observe approaching traffic.
3. Ability to judge speed and distance.
4. Knowledge of traffic regulations.
5. Temperament — excitability, etc.
6. Courtesy to other drivers and pedestrians.
7. Attitude towards care of vehicle.
8. Knowledge of Safe Practices.
9. Tendency to take chances.
10. Knowledge of and use of hand signals.

The applicant is sometimes required to undergo a written test under actual road conditions. Written tests include such questions as:

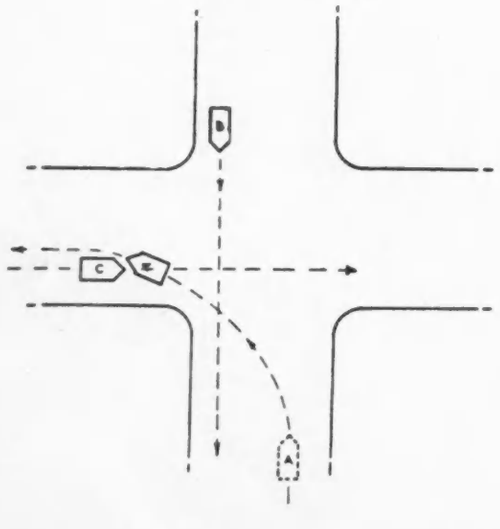
1. How long have you been driving a motor vehicle?
2. How many automobile accidents have you had during the last 12 months of driving time?
3. What items should be checked by the driver before leaving the garage on a trip or for the days work?
4. In what manner should the driver approach a street or road intersection?
5. At what points on the highway is it unsafe to attempt to pass another vehicle?
6. What is the correct procedure for passing a school house, children at play in the street, or a vehicle parked on the side of the road?

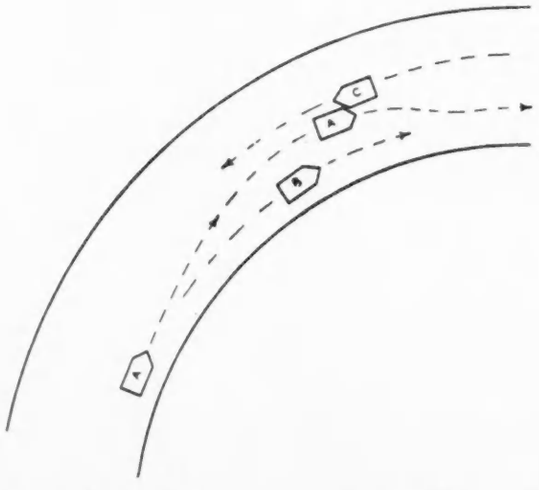
He is also requested to indicate which vehicle is in the wrong in given situations by use of illustrations such as shown in two accompanying diagrams. (See Figure 1.)

In every instance the driver is required to furnish a drivers license under the provisions of the

**FIGURE 1**

**Drivers are requested to indicate which vehicle is in the wrong in these two diagrams.**




**Indicate which of the cars is in the wrong**

.....

**Why?**.....

.....

**State which of the above cars is in the wrong**

.....

**Why?**.....

.....

# INFORMATION

## ABOUT YOUR WELLS

## PAYS DIVIDENDS FOR YEARS TO COME...

The survey of an oil well is a permanent record of the course of a hole from the surface to the producing sands. Made during drilling a survey tells you where the bottom of the hole is located at all times and enables you to continue to drill a straight or a directed well. In producing wells surveys are necessary for the development of an accurate, effective, remedial program.

Lane-Wells offers operators a complete survey service and single shot instruments to be run by the operator's crew. The cost of a survey or the rental of instruments is extremely small in comparison with the over-all cost of the completed well. Operators who have used these Lane-Wells services and instruments agree that the value they obtained in accurate information far outweighs the cost and will do so for years to come.

LANE WELLS COMPANY

TECHNICAL OILFIELD SERVICES

LOS ANGELES · HOUSTON · OKLAHOMA CITY · NEW YORK

LANE-WELLS SERVICES AND PRODUCTS INCLUDE: GUN PERFORATORS • OIL WELL SURVEYS • DIRECTION CONTROL OF DRILLING WELLS
PACKERS • LINER HANGERS • BRIDGING PLUGS • SINGLE SHOT SURVEY INSTRUMENTS • KNUCKLE JOINTS • WHIPSTOCKS AND MILLS

The slips are set while another stand of pipe is hooked on. The clamp, now at the floor level, has rotated with the pipe.

The Floor Man sights the target through the telescope.

Reading the vernier to determine pipe rotation. From these accurate readings, direction and inclination of the hole from the surface to the bottom are calculated.

law in the state and in the city where there are local licensing requirements.

### Equipment Inspection

Mechanical failures account for only a small percent of automobile accidents but the few that do develop from this cause are often times serious. A broken spindle or locked steering at 50 miles per hour can cause plenty of damage. Drivers are cautioned to check brakes, steering, lights and horn before starting out on a trip and such tests usually reveal the more outstanding defects. However, it is only by thorough and systematic inspection by experienced mechanics at regular intervals that more basic defects such as unusual wear, metal fatigue, etc., can be determined.

In our company every piece of equipment is brought in to the garage and thoroughly checked every three thousand miles. The transportation department maintains an accurate reading of the mileage on each piece of equipment through the use of semi-monthly mileage reports completed by the driver in charge and when it is observed that the vehicle has exceeded the 3000 mile limit without an inspection this is called to the attention of the driver and the equipment is brought in immediately for a thorough going over.

To insure that every vital point is checked on the vehicle the mechanic is provided with one of our "Mechanical Inspection Cards," which he uses as a guide. When the inspection is complete and the inspection card properly filled in, it is signed by the mechanic and approved by the driver and the shop foreman. Since our present program of Mechanical Inspection was instituted in 1932 our fleet has operated a total of 74,556,074 miles with only six accidents chargeable to mechanical failures.

Accompanying is a reproduction of "Mechanical Inspection Card," which is used on inspections made in company garages. A similar form is provided for use by outside garages who occasionally inspect equipment that is not conveniently located near a company garage. (See Figure 2.)

### Training Continuous Job

Training in safe practices, whether it is operating a vehicle or "hooking up" a well, is never finished. It is a continuous job and

**FIGURE 2**

**Mechanical inspection card for outside garages. The card is printed on 8½ x 11 inch heavy paper, which makes it ideal for filing.**

**MECHANICAL INSPECTION CARD—OUTSIDE GARAGES**

Date.....Car No.....Speedometer Reading.....

Department.....District.....Location.....

**OPERATION No. 1** — CHECK ✓

- Remove both front wheels.....
- Inspect wheel bearings—if bad, replace.....
- Pack front wheel bearings with wheel bearing grease, reinstall, and adjust.....
- Inspect tie rod and drag link ends; replace if necessary.....
- Tighten and adjust front end system.....
- Check springs for broken leaves—tighten spring clips and U bolts.....
- Check spring shackles, adjust if necessary.....
- Check front wheels for proper alignment.....
- Check all nuts, lock washers and cotter pins.....

**OPERATION No. 2**

- Inspect braking system (if hydraulic, check for leaks and refill master cylinder).....
- Adjust if necessary.....
- Reline if necessary.....
- Is this car equipped with governor? Yes.....No.....Set at what speed.....M. P. H.

**OPERATION No. 3**

- Clean and inspect battery cables (Replace if necessary). Grease terminals.....
- Refill battery with distilled water.....
- Inspect all wiring for shorts and loose connections.....
- Inspect horn, adjust if necessary.....
- Inspect all lights, install globes if necessary.....
- Inspect windshield wiper, repair if needed.....
- Inspect rear view mirror, replace if none.....
- Inspect left front tire.....
- Inspect left rear tire.....
- Inspect right front tire.....
- Inspect right rear tire.....

| | Good | Fair | Poor |
|---|---|---|---|
| Inspect left front tire..... | | | |
| Inspect left rear tire..... | | | |
| Inspect right front tire..... | | | |
| Inspect right rear tire..... | | | |

| LIST ALL PARTS USED | PRICE | DISCOUNT | NET |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Total parts net..... $.....

Total labor charge..... $.....

Total cost..... $.....

Total time making inspection.....Hours.....Minutes.....

Name of garage making inspection.....Location.....

Name of mechanic making inspection.....

Driver Chief Clerk District Manager

**NOTE:** After this inspection has been approved and made of record, mail to Transportation Department.

**Below is other side of Inspection Card**

**"INSPECTION INSURES SAFETY"**

**NOTICE TO DRIVERS**

**INSPECTIONS:** Mechanical inspections should be made every 3000 miles or sooner if needed. After inspection is made, approve this card and send it to your District Manager.

**LUBRICATION:** Have your car greased every 1000 miles.

**TIRES:** Correct air pressure should be kept in your tires at all times; this will increase your tire mileage.

**BATTERIES:** Water your battery twice each month; keep battery terminals and connections clean; use grease—this will stop corrosion.

**NOTE: THIS INSPECTION CARD IS TO BE USED ONLY IN OUTSIDE REPAIR SHOPS**

# FIGHTING FATIGUE

## IN BUILDING LIFE INTO WICKWIRE ROPE

## "BEYOND SPECIFICATIONS" . . . .

Samples of every piece of wire that goes to make up a Wickwire Rope are twisted and twisted. The number of complete turns each withstands is carefully recorded. No wire is acceptable unless its quality, as established by the twist test, meets Wickwire Spencer standards which are far in excess of recognized official specification standards. High ductility of rope wire means long fatigue rope life and service dollars in the pocket of the user.

# WICKWIRE ROPE

*It is still the privilege of the progressive manufacturer to build rope life into his product beyond official specifications.*

**WICKWIRE SPENCER STEEL COMPANY**

**General Offices: 41 East 42nd Street, New York City; Sales Offices and Warehouses: Worcester, New York, Chicago, Buffalo, San Francisco, Los Angeles, Tulsa, Chattanooga, Houston, Abilene, Texas, Portland, Seattle. Export Sales Department: New York City**

**FIGURE 3**

**This card is printed on 6 x 9 inch heavy paper.**

**CIRCUMSTANCES OF ACCIDENT**

| | OUR CAR | OTHER CAR |
|---|---|---|
| **A. GENERAL LOCATION.** | | |
| 1. Business District | | |
| 2. Residential District | | |
| 3. Rural District | | |
| **B. TYPE OF ACCIDENT.** | | |
| 1. Pedestrian | | |
| 2. Motor Vehicle | | |
| 3. R. R. Train | | |
| 4. Electric Car | | |
| 5. Bicycle | | |
| 6. Horse-drawn Vehicle | | |
| 7. Fixed Object | | |
| 8. Non-Collision Operating | | |
| 9. Non-Operating | | |
| **C. RESULT OF ACCIDENT** | | |
| 1. Fatal | | |
| 2. Other Personal Injury (no death) | | |
| 3. Property Damage Only | | |
| **D. MOVEMENT OF VEHICLE.** | | |
| 1. Turning Right | | |
| 2. Turning Left | | |
| 3. Going Straight Through | | |
| 4. Slowing Down or Stopping | | |
| 5. Backing | | |
| 6. Parked or Standing Still | | |
| 7. Skidding | | |
| 8. Rear-End Collision | | |
| **E. ACTION OF DRIVER.** | | |
| 1. Exceeding Speed Limit | | |
| 2. On Wrong Side of Road | | |
| 3. Didn't Have Right of Way | | |
| 4. Cutting In | | |
| 5. Passing Standing Street Car | | |
| 6. Passing on Curve or Hill | | |
| 7. Passing on Wrong Side | | |
| 8. Failed to Signal | | |
| 9. Improper Turning | | |
| 10. Failed to Observe Stop Sign | | |
| 11. Disregarded Officer or Signal | | |
| 12. Disregarded Slow or Warning Sign | | |
| 13. Drove Off Roadway | | |
| 14. Drove Through Safety Zone | | |
| 15. Double or Prohibited Parking | | |
| 16. Following Other Car too Close | | |
| **F. CONDITION OF DRIVER.** | | |
| 1. Intoxicated | | |
| 2. Physical Defect | | |
| 3. Asleep | | |
| **G. CONDITION OF VEHICLE.** | | |
| 1. Defective Brakes | | |
| 2. Improper Lights | | |
| 3. Defective Steering Gear | | |
| 4. Tire Puncture or Blowout | | |
| 5. Other Defects | | |

| | |
|---|---|
| **H. LOCATION ON HIGHWAY.** | |
| 1. At Intersection | |
| 2. At R. R. Crossing—Unguarded | |
| 3. *Same*—Guarded by Watchman or Gate | |
| 4. *Same*—Guarded by Automatic Signal | |
| 5. At Bridge or Underpass | |
| 6. On Curve | |
| 7. On Hill | |
| 8. On Straight Level Road | |
| 9. Other | |
| **I. ROAD SURFACE CONDITION.** | |
| 1. Dry | |
| 2. Wet | |
| 3. Muddy | |
| 4. Snowy | |
| 5. Icy | |
| **J. ROAD DEFECTS.** | |
| 1. Road Under Repair | |
| 2. Obstruction Not Lighted | |
| 3. Other | |
| **K. WEATHER CONDITIONS.** | |
| 1. Clear | |
| 2. Cloudy | |
| 3. Fog | |
| 4. Rain | |
| 5. Snow | |
| **L. LIGHT CONDITIONS.** | |
| 1. Daylight | |
| 2. Dusk | |
| 3. Darkness—No Street Lights | |
| 4. Darkness—Good Street Lights | |
| 5. Darkness—Poor Street Lights | |
| **M. ACTION OF PEDESTRIAN.** | |
| 1. Crossing at Intersection with Signal | |
| 2. *Same*—Against Signal | |
| 3. *Same*—No Signal | |
| 4. *Same*—Diagonally | |
| 5. Crossing Between Intersections | |
| 6. Playing or Working in Street | |
| 7. Riding or Hitching on Vehicles | |
| 8. Getting On or Off Street Car | |
| 9. Not in Roadway | |
| 10. Other | |
| **N. CONDITION OF PEDESTRIAN.** | |
| 1. Intoxicated | |
| 2. Physical Defect | |
| 3. Confused by Traffic | |
| 4. View Obstructed | |
| Dated | |
| Signed | |

**Other side of Accident Circumstance Report Card**

**INVESTIGATOR'S REPORT ON AUTOMOBILE ACCIDENT**

Date of Accident_____ Time of Day_____ Name of Driver_____

Company Employed by_____ District_____ Dept._____

Company Vehicle No._____ Type_____ Report Made Out by_____

Name and Address of Witnesses to Accident_____

Report of Accident from the Field:

Foreman's Comment as Stated in Report from Field:

Name of Foreman Signing Report_____

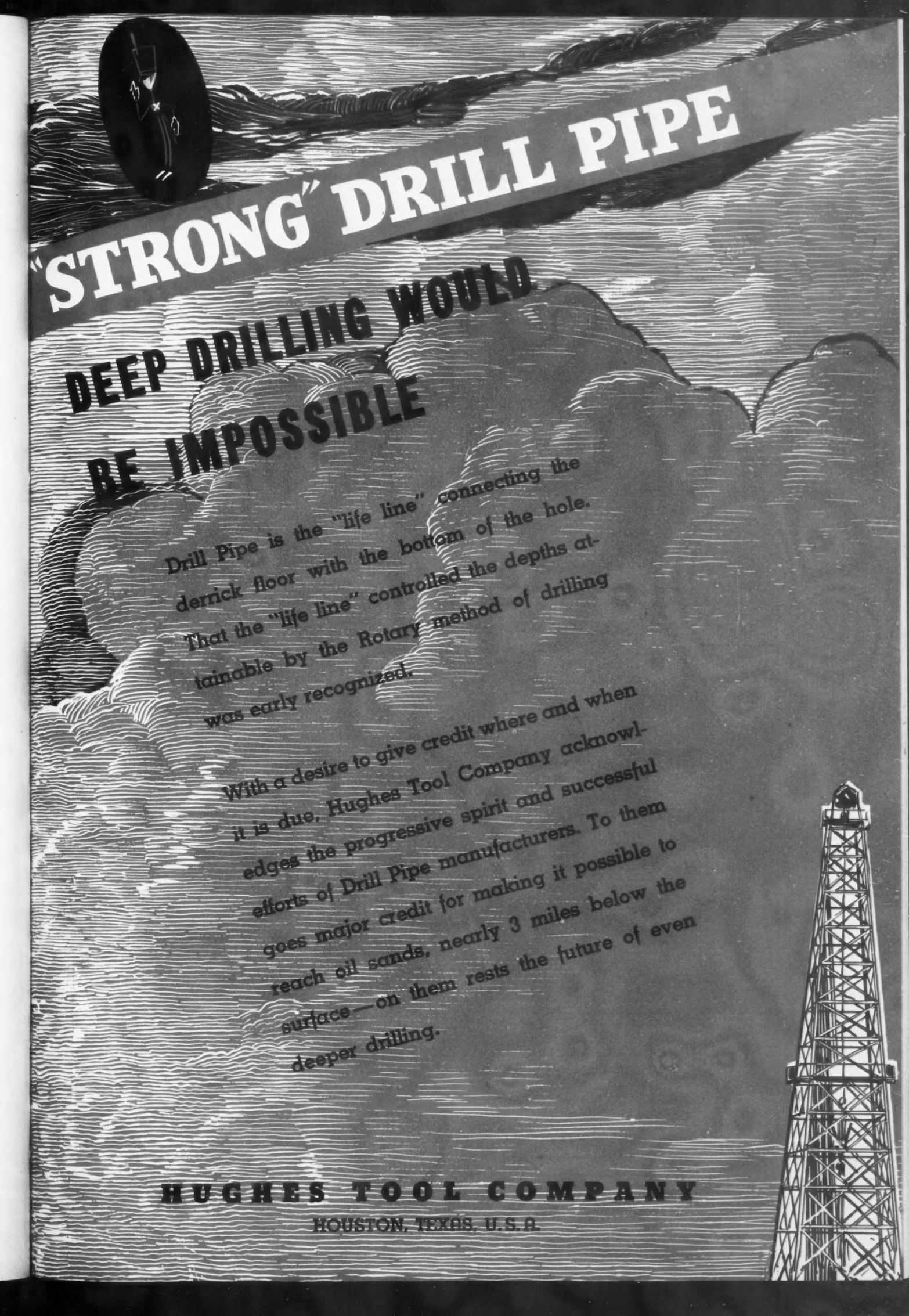
largely the responsibility of the supervisor. He must not only instruct his men but he must follow up by constantly observing their work habits to see that his instructions are carried out. Supplementing the foremen's training efforts, the Safety Department provides material each month on driving hazards and safe practices so that these discussions can be made a regular part of the monthly safety meetings.

Each automobile accident can be turned into a valuable safety lesson and all such accidents are thoroughly investigated. First, the driver must give his story of the when, the how and the why of the occurrence by completing one of our automobile accident report forms. The foreman is then required to investigate and report his findings by filling in that section of the form reserved for the supervisor's report. When completed by the driver and his immediate foreman the form then goes to the district manager who is required to approve it just so he will be kept informed as to who is having automobile accidents and why.

The final investigation is made by the Field Safety Engineer who is furnished with the details of the accident as reported by the employee involved. The safety engineer, after checking all available sources to verify the drivers story of the accident, classifies it as to cause and returns it to the Safety Department. By use of the accompanying cause classification we keep a running record which tells us under what conditions our accidents are happening and the actions of our own or other drivers involved, which are responsible. (See Figure 3.)

### Safe Driving Contest

Working on the theory that more can be accomplished by leadership than by drivership, we have instituted a "Safe Driving" contest that is directed towards developing a friendly spirit of rivalry between individuals and, also, between the various operating units. A Safe Driver Award Card, signed by the safety engineer and approved by the operating superintendent in charge, is awarded annually to all drivers completing the year without an accident. The card shows the cumulative record of the individual and many drivers now have cards covering the entire four year period that has elapsed since the contest was started. When a


"STRONG" DRILL PIPE
DEEP DRILLING WOULD BE IMPOSSIBLE
Drill Pipe is the "life line" connecting the derrick floor with the bottom of the hole. That the "life line" controlled the depths attainable by the Rotary method of drilling was early recognized.
With a desire to give credit where and when it is due, Hughes Tool Company acknowledges the progressive spirit and successful efforts of Drill Pipe manufacturers. To them goes major credit for making it possible to reach oil sands, nearly 3 miles below the surface—on them rests the future of even deeper drilling.
HUGHES TOOL COMPANY
HOUSTON, TEXAS, U.S.A.

**Gasoline and intoxicants are incompatible. Although used frequently a most excellent slogan is:**

★

If you drive don't drink

If you drink don't drive

★

driver has an accident he is required to send his card in and the arguments put forth in an effort to hold the cards convince us that the drivers prize them highly.

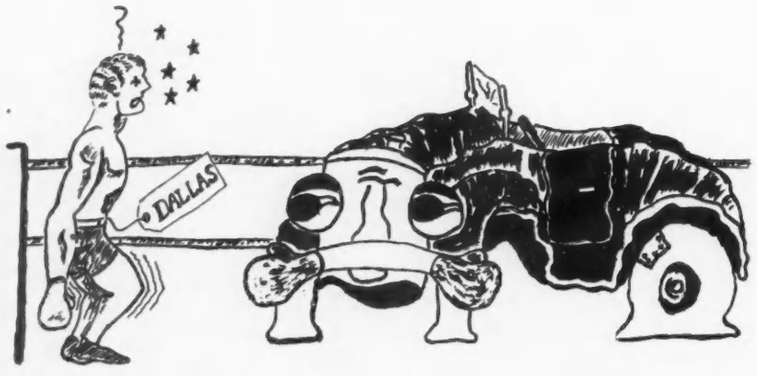
The inter-district contest provides only for a penalty award. Our penalty trophy, a miniature wrecked automobile, goes to the district with the highest frequency rate during the preceding month and must be displayed on the manager's desk until some other district experiences a worse record.

A bulletin is posted each month showing which district has the penalty award and listing those districts with perfect Automobile Safety Records. Accompanying is a reproduction of one of these posters. (See Figure 4.)

**FIGURE 4**

**Type of bulletin posted each month to show which district gets "penalty award," and those with perfect record. (Put on 8½ x 11 inch paper.)**

AUTOMOBILE ACCIDENT BULLETIN
SEPTEMBER 1938




Dallas District with one accident and 76,161 miles driven during the month of September has a frequency rate of 1.3 and will, therefore, display the automobile "Penalty Award" for the next 30 days.

DISTRICTS WITH PERFECT RECORD FOR YEAR TO DATE

| District | Vehicle Miles Operated |
|---|---|
| Southwest Louisiana | 288,435 |
| Baton Rouge | 114,324 |

• • •

RECORD TO DATE COMPARED TO SAME PERIOD LAST YEAR

| Year | Accident Frequency Per 100,000 Miles Operated |
|---|---|
| 1937 | 1.0 |
| 1938 | .7 |

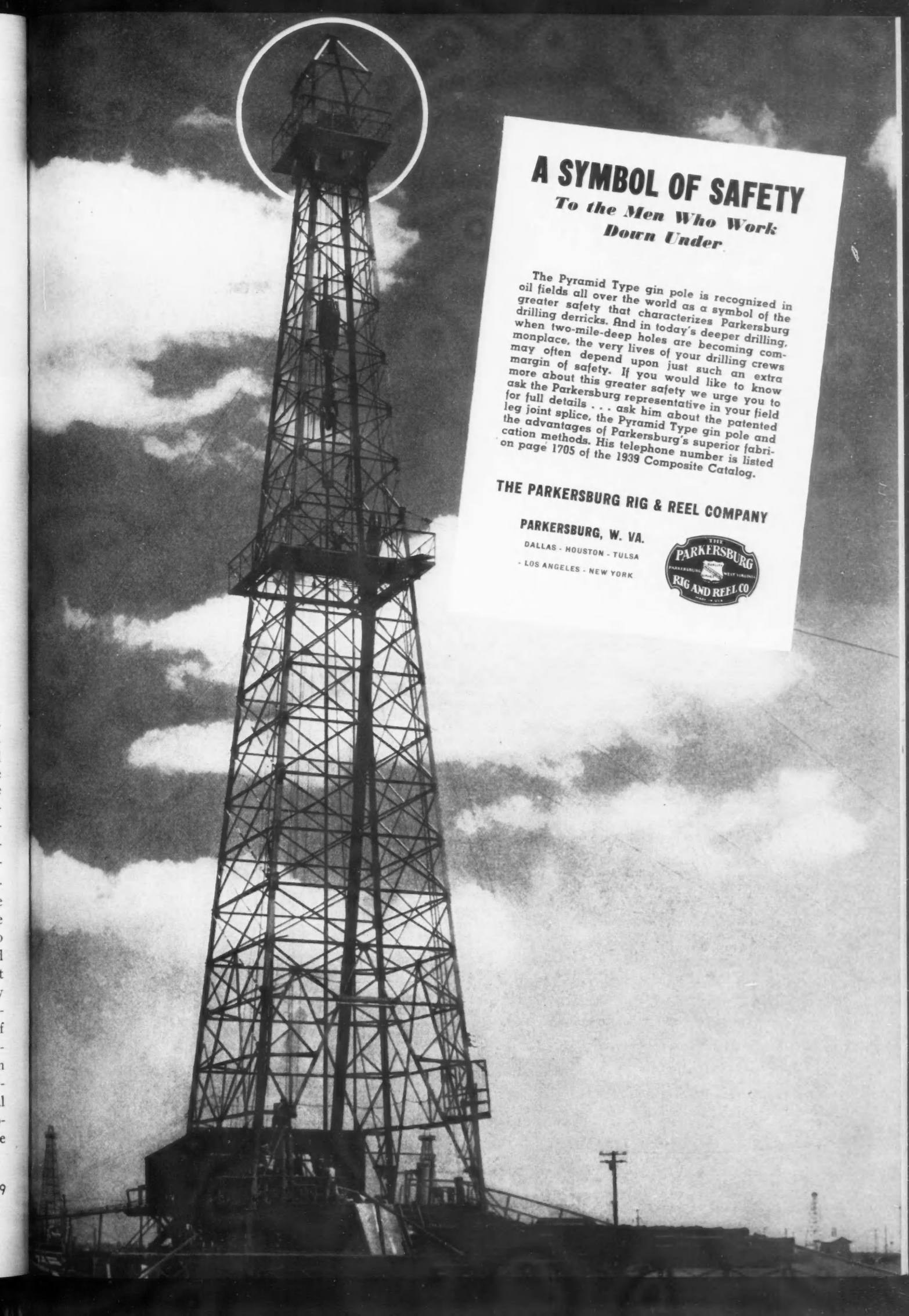
• • •

### Program Proving Worth

Such a program as described is proving its worth. When this plan was instituted in 1934 our automobile accident frequency was 2.84, that is to say, for every 100,000 miles operated, we were experiencing 2.84 accidents. Our record for the 10 months period ending October 31 was .7 accidents for each 100,000 miles operated.

The problem of controlling automobile accidents today, however, goes beyond the individual company's safe operation of its own fleet. It is astonishing, but none-theless true, that in the average company more employees are killed and injured in accidents on the streets and highways and in the home, than on the job. One company reports more employee off-duty fatalities from automobile accidents than occurred in all operations on the job during three years.

Such conditions are a challenge to the industry and emphasizes the fact that we must not only keep our own house in order and lead the way in automobile accident prevention but we must actively support state and local traffic control programs so that the story of safety will be carried to every motorist and the work of prevention that is being sponsored by enforcement, engineering and educational agencies will have the public support and force necessary to make it effective.



# A SYMBOL OF SAFETY

## *To the Men Who Work Down Under*

The Pyramid Type gin pole is recognized in oil fields all over the world as a symbol of the greater safety that characterizes Parkersburg drilling derricks. And in today's deeper drilling, when two-mile-deep holes are becoming commonplace, the very lives of your drilling crews may often depend upon just such an extra margin of safety. If you would like to know more about this greater safety we urge you to ask the Parkersburg representative in your field for full details . . . ask him about the patented leg joint splice, the Pyramid Type gin pole and the advantages of Parkersburg's superior fabrication methods. His telephone number is listed on page 1705 of the 1939 Composite Catalog.

**THE PARKERSBURG RIG & REEL COMPANY**

**PARKERSBURG, W. VA.**

DALLAS - HOUSTON - TULSA

- LOS ANGELES - NEW YORK

THE PARKERSBURG RIG AND REEL CO

# WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

## Mexican Situation

***State Department denies settlement of controversy. Mexican Ambassador Najera confers with Welles. Senate investigation of expropriation is sought.***

NO settlement of the controversy over Mexico's expropriation of American oil properties has been reached, it was declared this week at Washington, D. C., at the state department in comment upon rumors from Mexico City that a settlement had been agreed upon.

The report of a settlement was carried in a Mexican newspaper, which said the United States government would buy the oil and Mexico would use the money to pay indemnities for the expropriated properties and have enough left over to create "an exceptional bonanza" for the Mexican treasury.

**Hull says, "Nothing New"**

At the state department, in answer to questions as to the situation, Secretary of State Cordell Hull said that conferences, informal and exploratory, were still going on but that there is nothing new to report. In other quarters, the Mexican report was viewed as designed merely to gauge the reaction such a proposal would receive if actually suggested to the United States government.

During the past week, Dr. Francisco Castillo Najera, Mexican ambassador at Washington, conferred with Undersecretary Sumner Welles in further efforts to pave the way for a settlement of the dispute. He is believed to have laid before Welles proposals which his government instructed him to offer when he stopped off in Mexico City while returning to his post from the Lima Inter-American conference.

Also visiting the department was Patrick J. Hurley, former secretary of war, who is counsel for the Sinclair interests, who discussed the situation with Secretary Hull, apparently with a view to making another trip to Mexico to discuss the matter with the government.

**Seeks Investigation**

Senate investigation of the expropriation of American oil properties by Mexico and the policy of the Washington government toward that country is sought by Senator Robert R. Reynolds (Democrat, N. C.).

Introducing a resolution for the appointment of a committee of seven senators to make the investigation, Senator Reynolds indicated a desire to explore the treasury's policy in purchasing Mexican silver, declaring that it constitutes an indirect subsidy to Mexico and a "support of its policies."

If the situation in Mexico is as represented, he declared to the senate, it "makes the government of that country a violator of international law as well as of the natural rights of man."

"It has been stated and believed to be true that millions of dollars worth of property belonging under the laws of Mexico and of international law to citizens of the United States has been confiscated by the Mexican government," he explained. "At the time of the confiscation of such property so belonging to American citizens the government of Mexico was wholly unable to make compensation therefor, nor have they made restitution to the rightful owners of the property so taken."

**Exports Lower**

The present government in Mexico, according to widely published newspaper articles, is using property that it has confiscated from American citizens to enter into commercial and economic relations with European and Asiatic countries, Senator Reynolds pointed out. If this is true, he declared, it would make the Mexican government subservient to the governments that are said to be acquiring such economic and financial control and enable them to control the political affairs of Mexico, making it in effect a mere colony, in violation of the Monroe Doctrine.

Exports of Mexican oil and by-products in 1938 are expected to be about the lowest in the modern history of the Mexican oil industry, though no official figures have been released. This business in 1937 was a little more than 25,000,000 barrels, most of it to the United States and Great Britain. Shipments in 1938 continued at the rate of above 2,000,000 barrels a month, chiefly to the United States and British possessions, up to March 18, when the companies were expropriated. Responsible private sources cannot see foreign shipments exceeding 8,000,000 barrels from expropriation to the end of the year, which with exports during the three months of 1938 when the companies were still in charge, would bring these transactions to barely 14,000,000 barrels, a new low in the modern Mexican oil business.

Most of the government oil has gone directly or indirectly to Germany, with Italy and Japan the runners-up.

While Pemex continues to be secret about oil production, it is learned from reliable private sources that the output in November was around 3,300,000 barrels. These sources figure current output at about 110,000 daily. It is understood that the government is holding production to about that figure, as, according to the oil workers' union, domestic consumption is now from 15 to 20 percent higher than it was when the companies were in charge.

### *Pemex paying rent*

Payment of house rents for its Mexican oilfield workers has been started by Pemex on the basis of allowances of one peso (21 cents) extra for employees earning up to 10 pesos ($2.10) daily and of 1.50 pesos (32 cents) for those earning more than 10 pesos, it is reported. Pemex asserts that this action is another demonstration of its success in running the oil business. The workers do not receive these allowances; they are paid directly to the landlords.

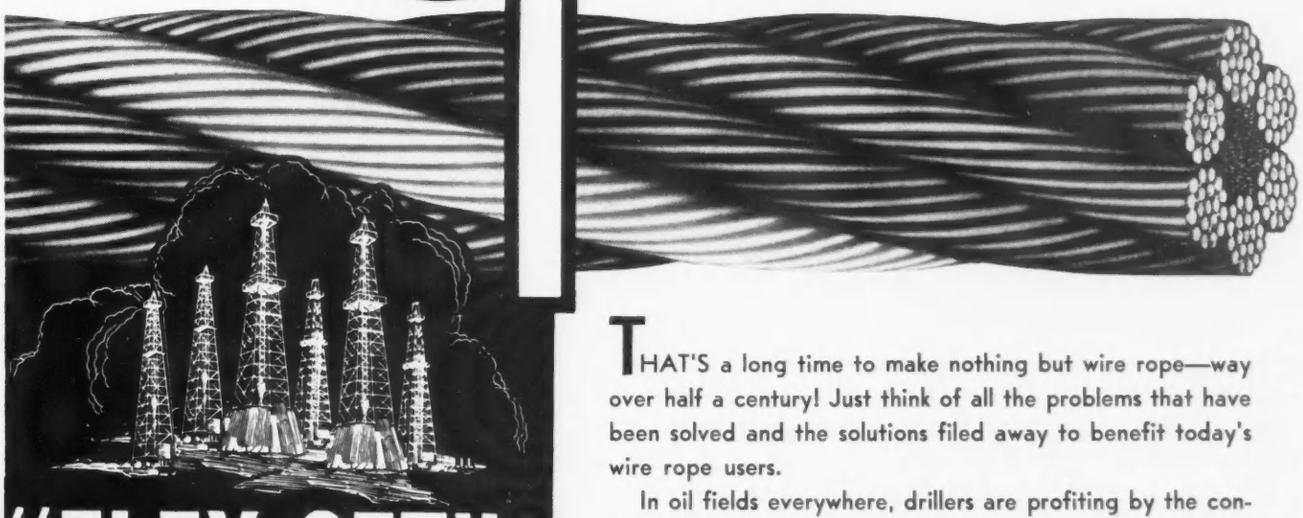
### *Cuba looking forward to more drilling this year*

With nearly 2,000,000 acres of lands under lease to Atlantic Refining Company and Shell-Mex of Cuba and active prospecting going on, it is possible that 1939 may afford an opportunity for Cuba to enter the ranks of petroleum producing nations on a substantial scale.

Atlantic already has spudded Puntilla 1 near Remedios in Santa Clara province. Production is expected around 6000 feet, but the rig being used is said to be capable of considerably greater depth.

A newspaper dispatch, discussing the structure on which Puntilla 1 is located, says, "As many as 250 wells will be drilled by this company alone if the

# 63 YEARS



# "FLEX-SET" Preformed YELLOW STRAND

THAT'S a long time to make nothing but wire rope—way over half a century! Just think of all the problems that have been solved and the solutions filed away to benefit today's wire rope users.

In oil fields everywhere, drillers are profiting by the continuous experience of Broderick & Bascom, dating from the moment wire lines began to be used.

On rotaries, B & B "Flex-Set" Preformed Yellow Strand is fast supplanting standard Yellow Strand, which long ago gained a reputation as a super rotary line.

"Flex-Set" Preformed Yellow Strand contains the same wonderful wire as standard Yellow Strand. The only difference is this: The wires and strands are permanently shaped to a helical form before they go into the rope. This difference makes a big difference in the characteristics, and in the life of the rope.

It is limp, easy to handle and install. Practically pre-broken in, it can be operated on full load and at full speed sooner, with less danger of damage. It spools evenly, operates smoothly, and is highly resistant to drum crushing, kinking and metal fatigue.

Try "Flex-Set" Preformed Yellow Strand Rotary Lines for long, economical service.

**FREE**
**DRILLERS' WIRE ROPE HAND BOOK**

**76 pages of valuable information for superintendents, drillers, engineers, purchasing agents. Write for your copy. No charge. No obligation.**

BRODERICK & BASCOM ROPE CO., ST. LOUIS
Houston Branch: 1311 Palmer St., Houston, Texas

**The Continental Supply Co.**
Mid-Continent and Rocky Mountain Distributors

V-13R-5

drillers strike oil in the quantities predicted by the geologists." Others are of the opinion that such predictions, this far in advance, do not sound very much like the typically conservative statements generally made by major company geologists.

However, with core drilling outfits and a heavy rotary on the ground, and with acreage blocks reputed to aggregate more than 1,000,000 acres, and with an investment in geological work dating back to 1928, Atlantic Refining Company apparently is going to make a serious effort to develop Cuban production. In addition, it is said Shell-Mex soon will start a test on its holdings, reported to total over 500,000 acres.

A more complete review of events transpiring in the Cuban oil industry in 1938 will be found in the International issue of THE OIL WEEKLY, to be published February 27.

## *Japan taking considerable oil from California ports*

Japan is really dependent upon the oil fuel supplies of California, as illustrated January 16 when four giant 18-knot Japanese-flag-tankers sailed from Los Angeles with 334,000 barrels of fuel and "navy crude." This proved to be the largest day's shipment to Japan in the history of the Los Angeles port and is consigned to naval bases of the imperial Japanese navy, with the destinations a secret—but they are reported to include Tokuyama, Sasebo and Kure.

New tankers from Yokohama bunkered at the Standard Oil Company terminals and later shifted to Standard's offshore line at El Segundo to take 90,000 barrels of navy crude. One day last week two units of the government-subsidized Ilno Shoji Kaisha fleet, the Juzisan Maru from Tokuyama, took on 77,000 barrels of fuel oil at the Richfield docks. The Toa Maru from Yokohama took on 80,000 barrels of fuel at the Associated Oil Company docks. Yamashita's new Nippon Maru arrived from Yokohama via Port Costa and loaded 87,000 barrels of fuel at the Richfield Oil Company docks at Long Beach and sailed that evening. The new Swedish motor tanker Ariston of the Salen line, on her maiden visit, loaded at the General Petroleum Corporation docks with 95,000 barrels of fuel.

## *Trade with United Kingdom shifts to refined bases*

Oil trade between the United States and the United Kingdom last year shifted from a crude to a refined basis, it was disclosed January 12 by the Department of Commerce in Washington.

Reporting upon the British-American trade situation in anticipation of improvement as a result of the reciprocal trade agreement which went into effect January 1, the department issued figures showing that during the first 10 months of 1938 exports of crude petroleum to the United Kingdom were but 89,000 barrels valued at $109,000, compared with 602,000 barrels valued at $845.000 in the corresponding period of 1937.

On the other hand, it was stated, major refined products showed a marked increase, exports of motor fuel jumping from 3,627,000 barrels valued at $8,960,000 in the first 10 months of 1937 to 6,558,000 barrels valued at $14,522,000 last year; natural gasoline, from 703,000 barrels valued at $1,832,000 to 967,000 barrels valued at $1,955,000; illuminating oil, from 861,000 barrels valued at $1,877,000 to 1,304,000 barrels valued at $2,431,000; gas oil and distillate fuel, from 1,710,000 barrels valued at $2,724,000 to 2,572,000 barrels valued at $4,248,000; and residual fuel oil, from 124,000 barrels valued at $157,000 to 383,000 barrels valued at $389,000.

The only refined products of which the United Kingdom took less in the 1938 period were naphtha solvents, where an increase from 160,000 to 178,000 barrels in quantity was offset by a drop in value from $665,000 to $416,000; lubricating oil, which dropped from $13,229,000 to $11,835,000; lubricating greases, which declined from 9,490,000 pounds valued at $338,000 to 4,814,000 pounds valued at $262,000; and paraffin wax, which dropped from 43,741,000 pounds valued at $1,303,000 to 37,069,000 pounds valued at $883,000.

## *Brazil authorizes plant near Rio de Janeiro*

Brazil's national petroleum council is reported to have authorized construction of a government refinery near Rio de Janeiro.

An official of the petroleum council is reported in the local press as stating that he did not know where the oil for the new refinery would be obtained, but that it was possible some of it might come from Mexico.

Mexico was known to have been negotiating with Brazil for the disposal of oil in 1938.

## *Czechoslovakian production down in November*

Production of crude petroleum in Czechoslovakia in November totaled 1534 metric tons, as compared with 2008 metric tons in October, and 1786 metric tons in November, 1937, representing declines of 23.6 percent and 14.1 percent, respectively, according to data obtained by Edward B. Lawson of Prague from the Czecho-Slovak Ministry of Public Works.

Cumulative figures for the 11-month period from January through November, 1938, show a total output of 17,840 metric tons of crude oil. The cumulative total represents an increase of 9.3 percent over the amount produced in the first 11 months of 1937, in which 16,322 metric tons were produced.

## *Chances of lower freight rates blasted by Neal*

A blow to hopes of Alberta oil operators for preferential freight rates on crude shipped to eastern markets was given by W. M. Neal, vice president in charge of western lines for Canadian Pacific Railway, who declared in Calgary last week that present freight rates are about the lowest in the world.

Alberta producers are cramped by inability to reach the eastern Canadian market. Negotiations have been under way for several months between representatives of the oil industry and of the railroads for a preferential rate that will make possible movement of Turner Valley crude to Sarina, where a market has been assured by Imperial Oil Company, Limited, and British American Oil Company, Limited.

Neal said that it was impossible to provide service for less than it actually costs to operate without the people paying for it in another way.

"We have two railways in Canada—one of which fails by a good many millions of dollars to pay interest on the direct debt, and the other to pay interest on the common stock and in some cases the preference shares," he said. "Hence it is obvious we cannot make any further substantial reductions in rates."

## *France's production of crude oil shows drop*

Production of crude oil in France during November totaled 5713 metric tons, as compared with 5971 metric tons in November of 1937, and 5923 metric tons in October, 1938.

Practically all the crude oil being produced in France today is coming from the Pechelbronn field, where most of it is mined.

## *Conservation board given control of Alberta wells*

Under provisions of an order-in-council approved by the Alberta provincial cabinet last week, jurisdiction over oil wells drilled in the west Canadian province, both during their drilling and producing stages, has been placed in the hands of the Alberta oil and gas conservation board.

The board, created during the past year, has formerly limited its operations to producing properties, its activities dealing principally with proration measures in the Turner Valley field. The new order places all oil and gas development in the hands of the board, including the granting of permits to drill, which were formerly issued by the minister of lands and mines.

## *Italy is concerned over prospecting operations*

The petroleum industry is receiving more than special attention in the Italian government's program of self-sufficiency, according to the American Commercial Attache at Rome. Research and drilling operations are being pushed in districts where geological formations indicate the possible presence of petroleum.

Imports of crude oil, meanwhile, have gained markedly, while imports of the finished product have declined. During the first 11 months of 1938, Italy imported 1,321,964 metric tons of crude oil as compared with 826,998 tons during the corresponding period of 1937, while during the same period imports of gasoline totaled only 90,190 metric tons as compared with 248,418 metric tons in 1937.

READING - PRATT & CADY

# A NEW STANDARD OF EFFICIENCY FOR BRONZE GATE VALVES

**FIGURE 86-B**

Cut-away view which shows the heavy body, extra long thread contacts and details of the new Reading-Pratt & Cady positive wedging mechanism that opens without jamming.

● This new standard is set by Reading-Pratt & Cady's new double disc—parallel seat bronze gate valve, Figure 86-B.

It closes *tight* because of design, exceptionally close guiding and finished seats . . . It opens without jamming because of its Reading-Pratt & Cady wedging mechanism . . . Heavy reinforced body; thread contacts that exceed A. P. I. requirements; packs under pressure; see follower in deep stuffing box.

*Get the detail specifications of this new 86-B and any other valves for your service.* **BUY ACCO QUALITY** *in Reading-Pratt & Cady Valves, Page Welding Electrodes, Lay-Set Preformed Wire Rope, American Chains, Ford Chain Blocks, Campbell Cutting Machines.*

**READING-PRATT & CADY DIVISION**
**BRIDGEPORT, CONNECTICUT**

## AMERICAN CHAIN & CABLE COMPANY, Inc.

AMERICAN CHAIN DIVISION • AMERICAN CABLE DIVISION • ANDREW C. CAMPBELL DIVISION • FORD CHAIN BLOCK DIVISION • HAZARD WIRE ROPE DIVISION • HIGHLAND IRON AND STEEL DIVISION • MANLEY MANUFACTURING DIVISION • OWEN SILENT SPRING COMPANY, INC. • PAGE STEEL AND WIRE DIVISION • READING-PRATT & CADY DIVISION • READING STEEL CASTING DIVISION • WRIGHT MANUFACTURING DIVISION • IN CANADA: DOMINION CHAIN COMPANY, LTD. • IN ENGLAND: BRITISH WIRE PRODUCTS, LTD. • THE PARSONS CHAIN COMPANY, LTD. • *In Business for Your Safety*

# MEN IN THE INDUSTRY'S NEWS

**H. M. STALCUP,** vice president of the Skelly Oil Company, and Ira H. Cram, division geologist at Tulsa for Pure Oil Company, addressed the Oklahoma Oil Scouts Association at Enid last week.

**EDGAR G. HILL,** vice president of the petroleum engineering firm of Ford, Bacon & Davis who last month was named president of the National Refining Company, was accompanied by William H. Lamprecht II, chairman of the board of directors of the National company, last week on a tour of the company's Kansas properties. Hal E. Redmon, geologist and landman, served as guide.

**CARLISLE G. WILLIAMS,** Brownsville, Texas; Louis K. Hamilton, Longview, Texas, and Robert D. Markel, Evansville, Indiana, last week organized the Illind Oil Corporation as an Indiana firm. Offices have been established at 605 Hulman Building, Evansville.

**BERTE R. HAIGH,** field geologist for the University of Texas Lands, was elected president of the West Texas Geological Society at the annual meeting held January 30 at Midland. He succeeds H. A. Hemphill, district geologist for Magnolia Petroleum Company. W. C. Fritz, Skelly Oil Company geologist and former secretary-treasurer, was chosen vice president, and Jess Simmons, Continental Oil Company, becomes secretary-treasurer. Dr. Phillip B. King of Carlsbad, N.M., was the guest speaker, and discussed "The Older Rocks of the Van Horn Region."

**W. T. DOHERTY,** Midland, Texas, independent since resigning last October as the West Texas division superintendent of production for Humble Oil & Refining Company, has moved to Houston. He will become associated with Robert Welch in the development of Gulf Coast properties.

**ROBERT H. RAY,** supervisor of torsion balance and gravity meter departments for Stanolind Oil & Gas Company, resigned February 1 to enter business for himself. He has opened an office at 2530 Gulf Building, Houston, and will engage in geophysical engineering, specializing in gravitational methods, gravity meter and torsion balance on a consulting basis and as a contractor.

**NORMAN P. TEAGUE** has been named acting supervisor of torsion balance and gravity meter departments for Stanolind Oil & Gas Company, Houston.

**J. W. COLLINS,** scout for Phillips Petroleum Company at Amarillo, has been transferred to St. Joseph, Missouri. His place at Amarillo has been taken by transfer of W. B. Smith from Bartlesville.

**VERNER JONES,** Magnolia Petroleum Company, Mattoon, Illinois, has been elected president of the Illinois Geological Society. Melville W. Fuller, Carter Oil Company, Mattoon, was elected vice president, and Elmer W. Ellsworth, W. C. McBride, Inc., Centralia, was named secretary-treasurer.

## Speaks at Kilgore Tuesday

**W. N. REES**

**will deliver a paper on the use of gas lift in the East Texas field before the East Texas Chapter of the American Petroleum Institute on Tuesday, February 7, at Kilgore, Texas.**

**Rees is a graduate mechanical engineer from Texas A. & M. College, and has been in the employment of The Atlantic Refining Company since August, 1933. His first duties were those of a pumper. In January, 1934, he was transferred to the Oklahoma-Kansas division of the firm, but returned to Texas late in that year and was made East Texas field foreman, which position he occupies at this time. Rees has approximately 400 wells under his direction, over 100 of which are being produced by gas lift.**

**SAM D. MORROW,** Tulsa operator associated with J. J. Deaner in Illinois activity, stopped in Owensboro, Kentucky, and Evansville, Indiana, last week while looking over the southern section of the Basin area.

**WILLIAM O. BEALL,** counsel for the Sinclair-Prairie Oil Company, last week was elected president of the Tulsa County Bar Association. He succeeds T. Austin Gavin. Beall became associated with the old Sinclair Oil & Gas Company in 1918.

**OLIVER JENKINS,** Kentucky drilling contractor, was in Evansville, Indiana, last week.

**T. C. STAUFFER,** acting head of Sun Oil Company operations in southern Indiana, left for the company's main offices in Philadelphia last week. He planned to be in the East for a few days.

**DON BOTHWELL,** vice president of the Darby Petroleum Corporation, has been named president of the Southern Hills Country Club at Tulsa. Oil men predominate among other officers, who are: Frank Prior, president of the Stanolind Oil & Gas Company, vice president; Frank McMillin, Jr., president of the Reiter-Foster Oil Corporation, vice president; Allmand Blow, vice president of the Amerada Petroleum Corporation, vice president; John Winters, Jr., of the law firm of Conner & Winters, secretary, and Charles Klein, treasurer of the Mid-Continent Petroleum Corporation, treasurer.

**MARSHALL R. SANGUINET,** scout for Republic Production Company in West Texas, with headquarters at San Angelo, has resigned. He will move to Mathis, Texas, where he will be associated with H. D. Miller in the drilling of a wildcat on the latter's ranch.

**GEORGE McLERNOR** of San Antonio, graduate petroleum engineer of the Oklahoma University, has been added to Magnolia Petroleum Company's petroleum engineering staff for duty in West Texas, with headquarters at Kermit.

**L. W. PETREE,** for the past seven years an oil and gas valuation engineer in the Income Tax Unit at Washington, D. C., has been transferred to Wichita, Kansas, effective February 1, to become resident field engineer attached to the Wichita office of the Internal Revenue Agent in Charge.

**M. L. GOSNEY** has been named treasurer of Sinclair Refining Company, operating subsidiary of Consolidated Oil Corporation, it was announced last week. He succeeds J. Fletcher Farrell.

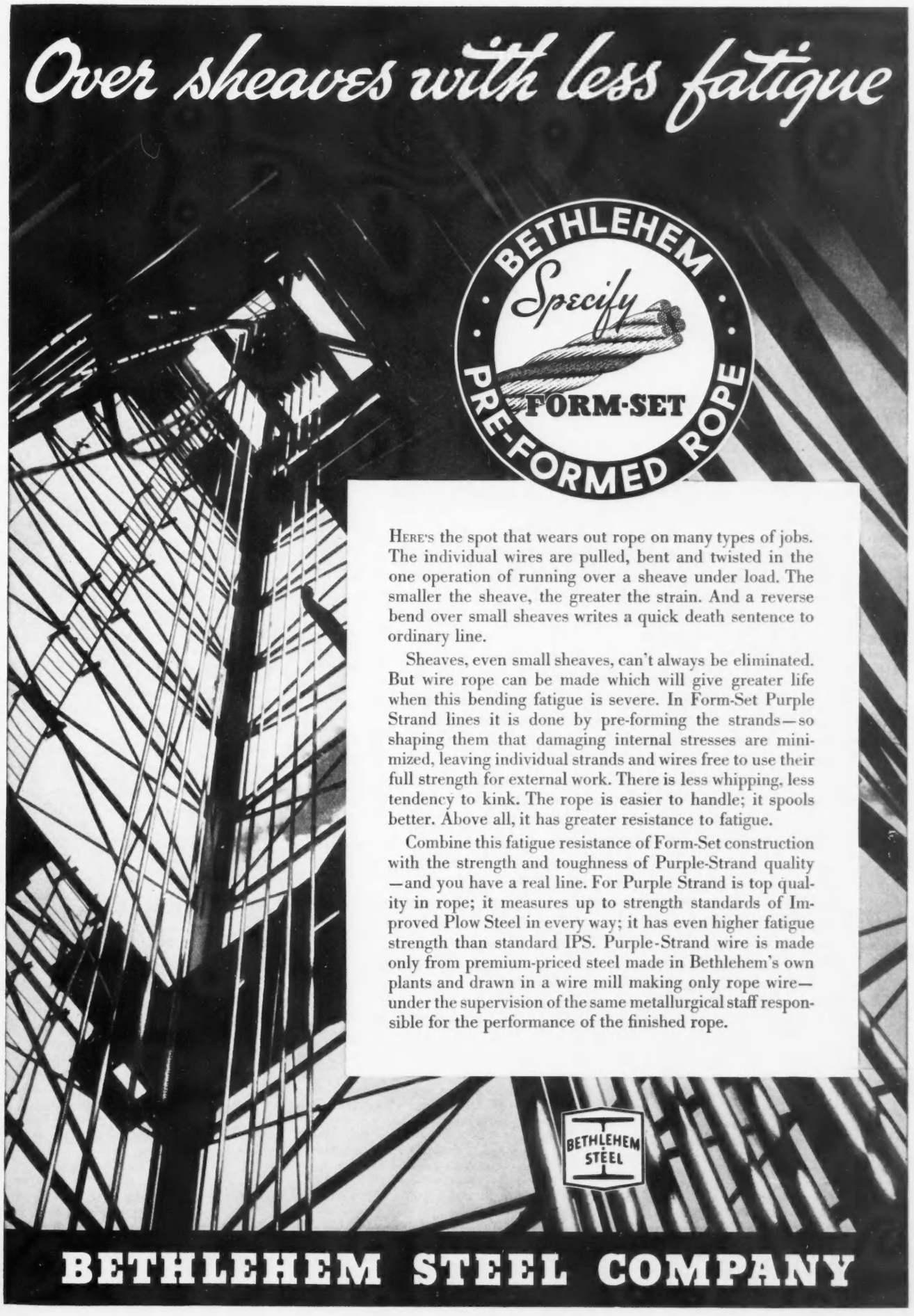
**A. P. JACOBSON,** J. C. Haynes and T. O. Markham last week organized the D. & H. Drilling Company as an Illinois oil and gas development company. Offices have been established at 100 West Main Street, Salem.

**ROY YARBROUGH,** of Hobbs, has been named New Mexico oil and gas inspector, succeeding Ross Walker, mayor of Hobbs who resigned in December. Yarbrough's appointment, effective February 1, was made at a meeting of the state Oil Conservation Commission last week. He will be in charge of the commission's field office at Hobbs.

**W. M. PURSIFULL,** Owensboro operator, was critically ill last week at the St. Joseph Infirmary in that Kentucky oil center. He has been in the hospital for two months.

**WILLIAM BROWN,** superintendent of gas production at Altamont, Effingham County, Illinois, for Carter Oil Company, has been transferred to Budapest, Hungary.

**O. S. CHAPIN,** president of the North Continental Oil & Gas Corporation, Ltd.; W. M. Connacher, secretary and treasurer, and E. C. Snider, counsel, have left Calgary, Alberta, for Toronto, On-


Over sheaves with less fatigue
BETHLEHEM
Specify
FORM-SET
PRE-FORMED ROPE
HERE'S the spot that wears out rope on many types of jobs. The individual wires are pulled, bent and twisted in the one operation of running over a sheave under load. The smaller the sheave, the greater the strain. And a reverse bend over small sheaves writes a quick death sentence to ordinary line.
Sheaves, even small sheaves, can't always be eliminated. But wire rope can be made which will give greater life when this bending fatigue is severe. In Form-Set Purple Strand lines it is done by pre-forming the strands—so shaping them that damaging internal stresses are minimized, leaving individual strands and wires free to use their full strength for external work. There is less whipping, less tendency to kink. The rope is easier to handle; it spools better. Above all, it has greater resistance to fatigue.
Combine this fatigue resistance of Form-Set construction with the strength and toughness of Purple-Strand quality—and you have a real line. For Purple Strand is top quality in rope; it measures up to strength standards of Improved Plow Steel in every way; it has even higher fatigue strength than standard IPS. Purple-Strand wire is made only from premium-priced steel made in Bethlehem's own plants and drawn in a wire mill making only rope wire—under the supervision of the same metallurgical staff responsible for the performance of the finished rope.
BETHLEHEM STEEL
BETHLEHEM STEEL COMPANY

tario, and New York, to attend meetings of the company. The firm, recently organized, is embarking on a development program in Alberta.

**F. P. BYRNE,** managing director of the Anglo-Canadian Oil Company, Ltd., one of the largest independent Alberta oil well drilling and operating firms, last week resigned from the directorates of nine Anglo-Canadian associate oil companies because of the pressure of duties with the parent concern. The companies are: Coronation Royalties, Ltd., Firestone Petroleums, Ltd., Foundation Petroleums, Ltd., Frontier Royalties, Ltd., Monarch Royalties, Ltd., Prairie Royalties, Ltd., Spy Hill Royalties, Ltd., Sundance Royalties, Ltd., and Westflank Oil Company, Ltd. J. Grant Spratt, former Alberta government petroleum engineer at Calgary, has been named to succeed Byrne as director of each of the associate companies.

**GEORGE SCHOONMAKER,** of the Longhorn Oil Company, is recovering from a bad cold suffered a week ago when called out of bed to inspect a sand saturation at the company's wildcat drilling in Wabash County, Illinois.

**FOREST TODD** is chairman of the newly created oil and gas committee of the Atchison (Kansas) chamber of commerce planning an Oil Day celebration as a good will gesture to oil men participating in the leasing campaign in the Forest City basin. Such a party was recently held in St. Joseph, Missouri, across the river from Atchison. Members of the committee are Bob Snowden, Brick Chandler, Charles Thayer, Virgil Hurst, George Ahlborn, Bill Blair, Chester Mize, Jr., Al Bennett and Ed Akers.

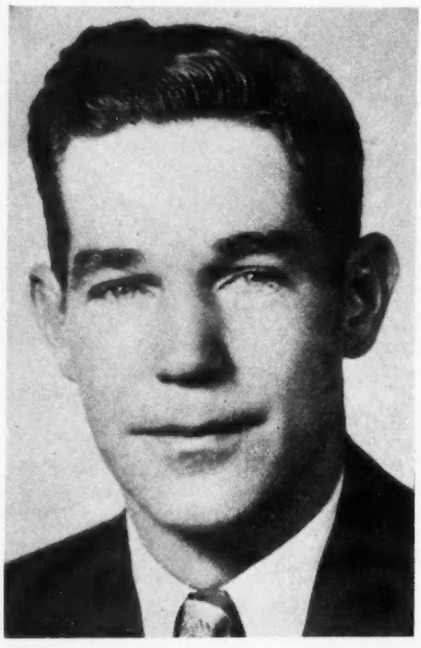
**C. M. REED** and Oliver Jenkins, operators with headquarters at Owensboro, Kentucky, were in Evansville, Indiana, last week.

**JOSEPH HAELY,** production engineer with the oil and gas conservation division of the Kansas Corporation Commission, will discuss "Method and Application for Calculating Well Potentials" February 6 before the Wichita chapter of the American Petroleum Institute, division of production.

**R. H. B. KER,** industrialist of Victoria, British Columbia, has been named president of Home Oil Company, Ltd., which has recently completed a large producer 12 miles north of principal production on the Turner Valley structure of Alberta. He succeeds Col. Nelson Spencer, who found pressure of other duties too great to permit him to continue as active head of the development firm. Spencer has been named chairman of the board.

Major James R. Lowery, Calgary oil man who has been closely connected with the company since its organization, has been named managing director. A technical field man with direct control over the company's field operations is to be appointed. Other officers, who remain unchanged, are Brigadier-General Victor W. Odlum, Vancouver, vice president; George F. V. Hudson, secretary-treasurer, and William A. Akhurst, Stanley J. Burke, Wendell B. Farris, K.C., A. L. Hager, W. H. Malkin, all of Vancouver, and Col. E. G. Hanson, Montreal, Quebec, directors.

**LLOYD L. JORDAN,** gas engineer for Lion Oil Refining Company in Texas, Arkansas and Louisiana since 1934, has been made senior gas engineer of the Arkansas Board of Conservation, according to O. C. Bailey, chairman of the board. Jordan, a native of Booneville,



**LLOYD L. JORDAN**

Arkansas, graduated from Ouachita College at Arkadelphia in 1929, majoring in mathematics. He then went with Sinclair Prairie Oil & Gas Company, staying with that organization until he joined the Lion.

**STEFAN W. DASZYNSKI,** head of the department of physics of the Polish Geological Survey, with offices at Warsaw, was visiting in Wichita, Kansas, last week. Formerly a member of the Kansas geological staff of Indian Territory Illuminating Oil Company, Daszynski has been on a geological mission in Central and South America. He planned to go to Colorado before returning to Warsaw. A graduate of the University of Chicago and the University of Pittsburgh, Daszynski has also worked in Asia Minor and several European countries.

# DIED:

**CHARLES NICKLOS,** 85, veteran oil operator passed away January 21 at his home in Glendale, California. From his birthplace in Rochester, New York, he went to Petrolia, Ontario, where he started his career in the refining business. He was then engaged by Bergheim and MacGarvey to construct and operate a refinery in Austria. After being employed in this capacity for seven years, he prepared to return to Canada, but the MacGarvey interests persuaded him to remain in Galicia, Austria, in charge of their production and drilling activities. He remained in Galicia until 1914 and then returned to the United States just prior to the World War. He resided at St. Croix Falls, Wisconsin, until 1922 at which time he retired and established his residence in California.

He is survived by three sons who followed their father's footsteps and are actively engaged in the oil industry: Ernest and John, prominent Gulf Coast drilling contractors, and Fred, division superintendent for The Texas Company, Craig, Colorado.

His wife, Mrs. Jessie Nicklos, passed away just two weeks prior to his death.

**H. L. PAYTON,** 35, former production and pipe line scout for Sun Oil Company in the East Texas field, died January 30 in a Dallas hospital of complications arising from an emergency appendectomy one week previous. He was relieved of scout duty and given an office assignment last year as result of the loss of an arm in an auto mishap.

**RICHARD CALLINAN,** 85, believed to be Canada's oldest oil operator, died January 22 at his home in Calgary, Alberta. A close friend of John Crosby, honored last year as "the grand old man of the oil industry," and an associate with John D. Rockefeller in Cleveland about 60 years ago, Callinan held large independent holdings in the old Petrolia field of Ontario. He first worked in Ontario fields with Bruce McLeod, father of J. H. McLeod, production manager in Alberta for Imperial Oil Company, Ltd. He retired in 1925. Surviving are a sister, a nephew and two grandchildren.

**JOE B. HURLEY,** Arkansas operator, died in a Chicago hospital January 28 and was buried at El Dorado, Arkansas, his home, January 31. He had been in ill health for several months but direct cause of death was a heart attack.

**A. E. "BERT" WILSON,** 62, former Wyoming oil operator and officer of the Midwest Oil Company, active in the Salt Creek field, died January 27 at his home in Beverly Hills, California. He had been ill for some time.

**FRED GLEASON,** 45, gasoline department superintendent for Phillips Petroleum Company at Bartlesville, Oklahoma, died January 25.

## *Mid-Continent A.P.I. meeting April 18-19*

The annual meeting of the Mid-Continent district of the American Petroleum Institute will be held April 18 and 19 at Oklahoma City. C. O. Rison, Indian Territory Illuminating Oil Company superintendent at Oklahoma City and chairman of the Oklahoma City chapter of the A.P.I. has been appointed chairman for the meeting.

A meeting of the A.P.I. chapter for Northeastern Oklahoma will be held in Tulsa February 10.

## *Atlantic's profits down*

The Atlantic Refining Company and subsidiary companies reported a profit of $4,317,000 for the year 1938, which compares with a profit of $9,942,000 for the year 1937. Both figures are after interest, depreciation, taxes, etc.

# THE WEEK'S NEWS SUMMARIZED

## Prices

The second increase in Pennsylvania crude oil prices within two weeks was the feature of the market last week. The new increase ranged from 8 to 15 cents a barrel. Some prices now are 20 cents a barrel higher than at the start of 1939.

There were only a few scattered revisions of wholesale prices of products. Certain grades of gasoline were lower in Oklahoma and Chicago territories.

The price situation, consequently, appeared to reflect increased steadiness, which is in contrast with their long unsettled condition.

## Legislation

A bill introduced to the Texas legislature would make the state's proration laws permanent. A hearing to be held February 15 will consider the measure, which merely eliminates the present provision for expiration of the law in September, 1939.

A new omnibus tax bill introduced at the Texas legislature would include higher oil and gas taxes to provide larger funds for the payment of pensions.

Indiana, which may join the rank of rising Middle West producing states, has had a measure introduced that provides for the conservation of oil and gas. A favorable report was made by the House Natural Resources Committee on the bill.

California's governor included a tax on petroleum, natural gas and natural gasoline in his budget recommendations last week. He asked a tax of 2 percent to raise approximately $12,000,000. State legislators of California are considering a measure that would ask Congress to defer action on the Nye resolution, which seeks to have title to all oil fields located in oceans passed to the federal government.

Texas proration laws may be made permanent, a bill having been introduced that would eliminate from present statutes the provision for expiration of the measure in September, 1939.

A new Texas omnibus tax bill placed in the hopper during the week provides for increased taxes on oil and gas. Oil would be taxed 5 cents a barrel, or five percent of the value except on small pumping wells. A levy of four percent on wells pumping between 10 and 20 barrels daily would be imposed; while those lifting less than 10 barrels would be taxed three cents or three percent. The tax on natural gas would be increased to five percent of the value.

A bill calling for enactment of an oil conservation measure in Michigan has been referred to a committee. The act, which closely follows New Mexico's oil-control law, is given a 50-50 chance for favorable action.

## Statistics

Latest weekly petroleum statistics showed curtailment of crude production and refinery runs, reduction of fuel and crude stocks, but an increase in gasoline inventories.

Crude runs to stills were down 75,000 barrels to 3,235,000 barrels, which was 2.1 percent heavier than a year ago. With adverse weather conditions in many parts of the country, this activity placed nearly 2,000,000 barrels of gasoline in storage. Gasoline stocks now total 77,279,000 barrels, where they, however, are 8.7 percent under the level of a year ago.

Gas and fuel stocks were reduced 2,000,000 barrels to 139,349,000, and now are but 17.3 percent larger than one year ago. Stocks of crude dropped 700,000 barrels to 271,110,000 barrels, and are 12 percent lower than a year ago.

## Courts

Of importance last week was a ruling that decisions in the Madison anti-trust trial cannot be admitted as evidence in a suit seeking damages from a group of major firms on the grounds they conspired to artificially raise and fix gasoline prices in Midwest States. The complaint was based mainly on a guilty verdict in the Madison case.

## News Section Index


**General News** ..... 59-68

Oil at the Capitols ..... 60
Oil in the Courts ..... 62
Market Situation ..... 62
Crude Oil Production ..... 67
Pipe Line News ..... 68

**World Developments** ..... 52

**Field Development News** ..... 70-89

Arkansas ..... 83
California ..... 86
Eastern States ..... 73-74
Indiana ..... 74
Illinois ..... 72
Kansas ..... 71
Kentucky ..... 73
Louisiana Coast ..... 81
North Louisiana ..... 82
Michigan ..... 85
Mountain States ..... 85
New Mexico ..... 84
Oklahoma ..... 70
East Texas ..... 78
Texas Gulf Coast ..... 80
North Texas ..... 77
Panhandle Texas ..... 76
Southwest Texas ..... 79
West Texas ..... 75
Wildcat Development Report ..... 88

# Oil at the Capitols

**Oil conservation laws, increased natural resource tax levies, and public land leasing measures have been introduced in several of state legislatures.**

### *Michigan's oil conservation law given 50-50 chance*

Introduced January 30 into the Michigan legislature was a new oil conservation bill which was referred to the committee on conservation.

The bill was drawn by Dr. R. A. Smith, state geologist, and patterns closer to New Mexico's oil-control law than any other. Although Dr. Smith drafted the bill it was only after numerous conferences with both the state conservation commission and leaders of the industry. The final draft had received the unanimous approval of the board of directors of the Oil and Gas Association of Michigan.

Administrative machinery provided in the bill makes the director of the present conservation department the supervisor of wells and the administrative head of the act; an advisory board of six experienced oil and gas men to assist the director, and an appeal board, which is the conservation commission. The director has broad powers but all are subject to the approval of the conservation commission. Except in emergency the supervisor is required to consult the advisory board before issuing new rules or regulations.

The advisory board or any interested person may appeal to the conservation commission (as the appeal board) when the supervisor proposes or makes an arbitrary or unwarranted rule or regulation.

The bill authorizes regulating production to the "reasonable market demand" and provides for proration; provides that in fields under proration that no oil can be sold or shipped or used until the supervisor issues a certificate of clearance; that oil or oil products produced in violation of the proration regulations is illegal oil and liable to seizure and confiscation or sale by the courts.

The bill provides for authorization of spacing units; taking of gas/oil ratios; pooling, prevention of wastes, disposal of brine, etc.

The bill also provides for a privilege fee of one eighth cent per barrel or, in effect, an eighth-cent-per-barrel tax on production, to aid in financing administration of the act. This would go to the general fund, however, under present statutes a drilling permit fee of $25.00 per well is required, and under the new act would be continued.

The bill specifically provides that wildcat exploration is not to be prevented.

Governor Frank Fitzgerald is supporting oil conservation legislation having made it an item in his administrative program when the session opened. Oil conservation bills have been killed in the past two successive legislatures but present indications point to the new bill having better than a 50-50 chance for approval.

### *Illinois considers study of proration*

Illinois legislative leaders, faced with the prospect of having numerous bills tending toward regulation of the state's booming oil industry, are considering a study of oil production and regulation in Oklahoma and Texas.

A bill authorizing the study is being prepared for introduction in the house of representatives. It will provide for a committee of three representatives and three senators to study oil production methods in the southwest and report back to the legislature.

Among bills tossed into the legislative hopper last week were three by Senator John J. Parish, Democrat of Centralia, to require oil and gas well drillers to make bi-monthly reports on progress, to drill offset wells and to prohibit discrimination in the purchase of oil.

### *Indiana drafts oil conservation measure*

An Indiana house measure introduced last week would give the conservation department board powers to regulate the oil and gas industry and provide for limitation of production.

The department would be empowered to hold hearings and could institute contempt proceedings in circuit court against persons refusing to testify or produce requested records. Injunction suits could be employed by persons affected or by the department, and false statements before the department under oath would be considered a felony and be made subject to a maximum fine of $1000, a maximum prison sentence of 3 years, or both.

Administration of the act would be financed by a tax of one-half cent on each barrel of crude oil produced within the state.

When given a favorable report by the House Natural Resources Committee late in the week and placed in line for second reading, the Vanderburgh County (Evansville) delegation sought to delay further consideration until oil men "back home" had an opportunity to study the measure.

Representative Winfield K. Denton, of Evansville, termed the bill "highly regulatory and almost vicious" and said he was having a large number of copies of the bill made for distribution to oil men for criticism. "I can't speak for the oil men until I hear from them further on it, but we certainly are going to try to stop a vote on the bill pending their replies," Denton said. "I'm sure the rest of the House will do that much for us."

An opinion that Indiana operators would oppose any bill which would provide restrictions on production was expressed by Representative William E. Gibbons, of Elberfeld. "Our wells aren't large enough for a quota and such a system might ruin them," he said.

Fred Ely, attorney for the state conservation department, said the bill was designed to prevent "a situation in Indiana like prevails in Illinois." Lack of regulation in the sucker state, he said, has produced a waste of oil and in some instances has resulted in the ruin of the drinking water supply of entire towns because of the seepage of salt water from wildcat wells. The Indiana bill was described as having been drafted after a study of similar laws in the Southwestern states.

### *Texas may make its proration law permanent*

A hearing on the extension of Texas proration laws has been scheduled for February 15, before the House Committee on Oil, Gas and Mining. The bill to be considered merely eliminates from the statute the provision for the expiration of the law in September, 1939. The effect of this change would be to make the laws permanent, and no other changes are contemplated.

It has been suggested, however, that abandonment of some of the statutes might be wise, especially those which enable the Railroad Commission to reduce allowable production on the basis of market demand. This program has been advocated in an effort to have Texas produce more oil and prevent Louisiana and California fields from cutting in on the Texas market because their production is not so greatly restricted.

### *California legislators study tideland measures*

Governor Culbert L. Olson will take immediate steps to retain tide and submerged oil lands in Southern California, Assemblyman Maurice Atkinson, Los Angeles County, predicted last week during debate on a resolution asking congress to defer action on the Nye resolution, which directs the United States attorney general and the secretary of interior to obtain a court decision as to the legal ownership of certain California tide and submerged land.

Atkinson, in withdrawing his previously announced opposition to the resolution, said:

"I don't want this body to do anything which will jeopardize the public recovery of the oil bearing tidelands, and I want the state's rights protected. After all, this oil belongs to the people. But I am confident the new state administration will intervene to make the recovery of this land for the people of California."

The resolution, introduced in the upper house by Senator Arthur Breed, of Alameda County, and previously adopted by that body, was approved by the lower house by a vote of 60 to 9.

Declaring "oil people were the only

ones who approached me to vote in favor of this resolution," Assemblyman S. L. Heisinger, of Fresno County, expressed opposition to the measure before it was put to a roll call. "Past administrations have given our oil to the large corporations," he said.

Urging adoption of the resolution, Assemblyman James Phillips of Alameda County, author of an identical proposal in the lower house, said that the entire California congressional delegation is working against the Nye proposal.

## *New Texas omnibus tax bill calls for oil increase*

Seeking a "better plan" for supplying pension funds, a new omnibus tax bill was introduced into the legislature last week. It includes the entire pension plan advocated by Governor Lee O'Daniel, but would provide funds derived from increased taxes on cigarettes, oil, gas and sulphur. The bill was signed by 44 House members when it was introduced.

The oil section provides for a tax of five cents a barrel, or five percent of the value except on oil produced from pumping wells capable of producing not less than 10 nor more than 20 barrels daily, when the tax drops to four cents or four percent. On smaller producers, that is, those that can pump less than 10 barrels per day on the average, the tax would be only three cents or three percent of the value.

The tax on natural gas would be increased to five percent of the value and the authors estimated that $16,000,000 a year would be raised by the bill.

Another bill was introduced by Representative Abe Mays of Atlanta, which provided for a tax of six cents per 1000 cubic feet on natural gas.

## *Holloway to represent Oklahoma on Compact*

After signing the bill by which Oklahoma will continue as a member of the Interstate Oil Compact Commission for two years from September 1, Governor Leon C. Phillips last week named W. J. Hollowav as assistant representative for the state. Holloway will represent Oklahoma at compact meetings when the governor is not present.

Holloway has served as attorney for the compact commission since it was formed. He is a former governor of Oklahoma. He succeeds Tom Anglin, now a member of the Oklahoma senate.

## *Texas vacancy land sale is cancelled*

State Land Commissioner Bascom Giles has cancelled sale of a 5314-acre vacancy in Webb County. The land had been purchased by M. C. Sado for a price that Giles thought insufficient.

At the same time he announced the cancellation, Giles said that he was checking several other awards made by former Land Commissioner McDonald and that with the advice of the Attorney General, he thought other sales might be cancelled.

## *Severance tax recommended by California governor*

As predicted by legislative observers, a severance tax on petroleum, natural gas and natural gasoline is included in the budget recommendations of California's Governor Culbert L. Olson, submitted to the legislature last week. He asked a tax of approximately 2 percent to raise an estimated $12,000,000.

A bill introduced last week by Assemblyman Maurice Atkinson, Los Angeles County, would authorize creation of a state oil and gas proration commission for the purpose of conserving the state's natural resources. Members of the commission would be the governor, the state director of finance and the state director of natural resources. The governor would have the power to name an oil man to represent him on the commission if he so desired.

Besides the governor's severance tax proposal, a previously-introduced bill by Assemblyman Voigt would levy a 10 percent tax on petroleum and a tax of 5 cents per thousand cubic feet on natural gas along with similar levies on other natural resources.

## *Texas abolishes tax commissioner office*

The Texas Legislature has passed a bill abolishing the office of State Tax Commissioner which became law February 2 when signed by the Governor. The new law provides that the functions formerly performed by the State Tax Commissioner shall be turned over to a Board consisting of the Comptroller, the Attorney General and the Secretary of State.

The bill was first introduced when Governor O'Daniel sent to the senate the name of Elster Haile, whom many members regarded as a citizen of Kansas rather than of Texas. While the Governor has expressed satisfaction with the abolishment of the office as a step toward economy, several legislators fear the next result will be failure to assess intangible assets taxes properly. They point out that these assessments are exceedingly complicated and require the thorough study of an able commissioner.

## *Two Texas public land leasing bills introduced*

Identical bills have been introduced in both Houses of the Texas Iegislature, that are intended to correct abuses resulting from the lease of public lands for oil development and for the sale of school and vacancy lands.

Some of the measures were drawn by Marlin Sandlin, attorney for the State Land Commissioner, and include changes recommended by Bascom Giles, newly elected to that office. While Giles has just been elected, he has worked in the department for many years, and is thoroughly familiar with the problems.

He urged that the Legislature create a school land board composed of the Land Commissioner as chairman and the Governor and Attorney General. This board would replace the Board of Mineral Development and its principal duties would be to pass on sale or lease of all public free school lands and other problems relating to these lands.

The law would revise vacancy filing to require applicants to file a minimum of $100.00 along with the application and enough money in addition to provide for cost of surveying by the Land Commissioner. In addition, adjoining land owners or other claimants in good faith would be given a right to purchase or lease unsurveyed lands.

In order to give the bill an opportunity to become effective, Giles would withdraw from the market all school lands until the Legislature had acted, and a new bill had become effective. One of the principal services to result from the statute would be the correction of titles throughout the state.

## *Missouri may award its first oil well*

Missouri last week gave indication of joining Nebraska in offering a cash prize for the first commercial oil well completed within the state.

Representative H. T. Floyd, Republican of Andrew County, in the Forest City Basin area, is author of a measure which would provide a $10,000 bonus to the first individual or concern that brought in a well producing 10,000 gallons, or 238 barrels a day for 30 consecutive days.

A Nebraska bill would raise a $15,000 reward of 10 years standing to $75,000 payable to an individual or firm with the first producing well yielding 50 barrels a day for 60 consecutive days.

## *Texas Railroad Commission continues personnel purge*

The Texas Railroad Commission last week continued its purge, resulting from the defeat of C. V. Terrell and the election of Jerry Sadler. In a lengthy list, which included many replacements, 36 employees were let out.

The following Oil and Gas Division changes were ordered:

T. U. Welborn, Athens, takes the place of Frank Maley, deputy Supervisor, Kilgore; Gordon Bigham, Holland, replaces D. A. Baggett, junior accountant, Kilgore; John Allison, Eustace, replaces A. A. St. John, junior accountant, Kilgore; Wallace Baumgarten, Schulenburg, replaces F. L. Bayless, inspector, Kilgore; Jesse Blanton, Houston, replaces W. O. Senters, junior accountant, Kilgore; Brown McCallum, Corpus Christi, takes the place of C. A. Kendall, clerk, Corpus Christi.

Ellis Stembridge, Gilmer, replaces Alton Tooley, inspector, Kilgore; J. G. Barker, Marshall, replaces O. F. Harris, inspector, Kilgore; Jim Fulks, Paris, replaces J. F. Hawkins. inspector, Kilgore; Ellis Wilburn, Center, replaces L. L. Roberts, inspector, Kilgore; M. B. James, Seguin, takes the place of R. W. Wright, inspector, Corpus Christi; Bob Huff, Amarillo, replaces H. C. Coffee, inspector, Pampa, Lila Lee Fuller, Houston, replaces Ann Joiner, valuation and statistical clerk, Kilgore; Blanche Jones, Baird, was employed as statistical clerk, Abilene.

R. A. Green, Dallas, replaces Earl Ford, inspector, Kilgore; A. R. Hall, Fort Worth, replaces W. N. Harris,

inspector, Kilgore; Madge Stanley, Tenaha, replaces Selma Mills, stenographer, Kilgore; Lorena Baker, Coryell County, takes the place of Mary Hatch, Austin; Dan Doyle, Fort Worth, replaces C. M. Hapgood, conservation officer, Corpus Christi; Emil Stryk, Fayette County, replaces A. C. Lloyd, statistical clerk, Corpus Christi; F. P. Phillips, Hearne, replaces Lacy Nobles, Austin, junior accountant; Charles R. Cox, Wharton, replaces W. W. Wynne, inspector, Corpus Christi; E. A. Ray, Collin County, replaces Frank Jolly, inspector, Beaumont; Joe Fogaly, Corpus Christi, replaces R. E. Wood, inspector, Kilgore; Grover Johnson, Wichita Falls, replaces Harry Warren, Wayne Parks, Beeville, replaces F. M. Says, Kilgore, inspector, Kilgore; Jack Ponder, Daingerfield, replaces J. P. Coon, field inspector, Kilgore; W. E. Smith, Navasota, replaces T. A. Parker, Jr., inspector, Kilgore; John Dugham, Washington County, replaces Claude Hibbetts, junior accountant, Austin.

Mrs. Wilma Oneal, now in the commission's employ, will be transferred to the motor transportation division to replace Miss Margaret Smith as file clerk. Her former position in the oil and gas division will be occupied by Mrs. Ova Davis, Austin. Mrs. Nell Sutton was employed as information clerk.

# Market Situation

**Pennsylvania crude prices advanced second time in two weeks . . . Refined market also show strength as only few scattered downward revisions are made**

### *Markets are steady but outlook partly clouded*

Some curtailment of refinery runs and of crude oil production in the closing portion of January had a beneficial effect on the industry's markets, and prices currently appear more stable than heretofore, very few changes having been made in the past 10 days.

However, operations vary considerably from week to week, and there is some danger that both crude production and refinery runs in coming weeks may prove higher than desirable.

Crude oil production for the country as a whole is at present about in balance with the current demand for domestic crude, and crude stocks now are not changing materially. But allowables in the leading producing states are not quite as strict in February as in past months, and they probably will result in additions to storage, although some of the larger companies have in storage surplus crude that they desire to withdraw.

Meanwhile, Illinois and Michigan, important producing states that do not have governmental proration, continue to produce greater quantites of oil than the markets can readily absorb, and the surplus production is being sold for considerably less than the posted prices.

Fears are being revived regarding the ability of the Mid-Continent crude price structure to stand up in the face of the continued under-market selling of Illinois crude.

The crude market in California also has appeared in danger, but in recent weeks it has been bolstered by the curtailment of production there.

A problem as important as that of holding crude production down properly is that of adequately restricting crude runs to refinery stills. The runs have been unusually high this winter, and only the milder than normal weather has prevented exceptionally large additions to gasoline storage. However, the weather lately has been severe, and gasoline consumption has been curtailed. Consequently, prompt and sharp cutting down of plant throughput of crude may be required to prevent large additions to gasoline stocks.

So far, gasoline inventories have been held down satisfactorily. But there is now a definite danger that they may be increased excessively, unless strict watch over refinery output is maintained.

### *Pennsylvania crude prices are increased again*

Another increase in Pennsylvania grade crude oil prices, and only a few scattered revisions of wholesale product postings occurred during the week

The price situation consequently appeared to reflect increased steadiness of the markets, which have been long unsettled.

Practically the only changes in product prices last week were further downward revisions for certain grades of gasoline in the Oklahoma and Chicago markets.

In addition, there was a sagging of prices of range oil in the Chicago market.

In further reflection of the improved demand for that type of oil, prices of Pennsylvania grade crude have been advanced a second time within two weeks.

The new increases, effective February 2, ranged from 8 to 15 cents a barrel. The earlier revisions, made January 21, were increases of 9 to 12 cents.

Bradford-Allegany crude was raised

# Oil in the Courts

**Madison decisions not to be permitted as evidence in suit seeking damages for alleged price fixing**

### *Madison decisions cannot be used in damage suit*

Decisions in the Madison anti-trust trial, in which a group of major oil companies and oil company officials were found guilty of conspiracy to artificially raise and fix gasoline prices in midwestern states, cannot be admitted as evidence in a triple damage suit against companies who were involved in the Madison trial, Federal Judge Gunnar H. Nordbye held at Minneapolis last week.

The ruling was made in a suit for triple damages, totaling $700,397, brought by Twin Ports Oil Company of Minneapolis, a jobbing firm, against The Pure Oil Company, Standard Oil Company (Indiana), Sinclair Refining Company, Shell Petroleum Corporation, Phillips Petroleum Company, Socony-Vacuum Oil Company, Inc., Skelly Oil Company, Continental Oil Company and Cities Service Oil Company.

The complaint was based mainly on the fact that findings in the Madison case resulted in a guilty verdict. The Twin Ports company charged a conspiracy on the part of the defendant companies to increase prices and establish a uniformity on several jobbers' contracts to prevent Twin Ports from making a new contract with another of the companies if the plaintiff were not satisfied with one of the major company's contract.

Judge Nordbye held that defendants convicted in the Madison trial have since appealed the district court verdict, and that their cases are now befor the United States Circuit Court of Appeals at Chicago. Upon settlement of the appeals, the Minneapolis jurist indicated, the first Madison case will be applicable in the Minneapolis suit. In the second case, however, where virtually the same group of defendants convicted entered pleas of nolo contendre that did not constitute an admission of facts of conspiracy, the matter is not admissible to the Minneapolis suit.

### *Five firms fined for pollution in Kentucky*

Described as the first case of its kind decided in Kentucky, Conservation Officer Stanley Shelton, Maceo, announced a court decision in favor of the state on an action brought against five oil companies on charges of polluting Green and Rough rivers in McLean and Ohio counties. The companies were fined $64.50 each.

Shelton said the companies had been dumping black oil into the streams, where it formed a scum on the water to shut off air from fish. The action was filed last November after thousands of fish had met death, Shelton said.

# Specialists in LAPWELD CASING *for nearly half a century*

**District Sales Managers:**

F. H. Gibson, 1331 Gulf Building, Pittsburgh, Pa.

J. P. Steele, Petroleum Building, Fort Worth, Texas.

J. P. Cooney, 715-716 Bartlett Bldg., Los Angeles, Calif.

**District Offices:**

South Chester Tube Co., 1708 Hudson Terminal Bldg., 30 Church St., New York, N. Y.

J. D. Swartz, Hunt Building, Tulsa, Okla.

E. L. Moseley, 2218 Mills St., Houston, Texas.

**Distributors**

**Mid-Continent District**

Western Supply Co.
Dunigan Tool & Supply Co.
Bridgeport Machine Co.
Louisiana Supply Co.
Industrial Supply Co.
Decker Tool & Supply Co.
J. E. Matthews

**California District**

**Los Angeles**

Tubular Sales Co.
Viking Automatic Sprinkler Co.
Standard Pipe & Supply Co.
J. D. Rush Co.
Herley Supply Co.

**San Francisco**

Stephen H. McCabe, 564 Bryant St.

Barde Steel Co., Seattle, Wash., and Portland, Ore.

Star Drilling Machine Co., Portland, Ore.

United Pipe & Supply Corp., Charleston, W. Virginia, and Branches.

Atha Supply Co., Hundred, W. Virginia.

Prichard Supply Co., Mannington, W. Virginia, and Branches.

**SOUTH CHESTER TUBE CO.**
**Chester, Pa.**

**DISTRICT WAREHOUSES:**
**Houston, Texas; Thenard, Calif.; San Francisco, Calif.**

# CHESTER

## STEEL CASING AND LINE PIPE

# CRUDE OIL PRICE SCHEDULES

## MID-CONTINENT GRAVITY SCALE PRICES

**(Posted October 11-13, 1938)**

**(Some fields of Mid-Continent have flat price postings, and are shown separately).**

| GRAVITY | [7]Okla.-Kans. | North La.-Ark. | North & W. Central Tex. | East Central Tex. | Gray Co. Tex. | Carson Hutchinson Co. Tex. | [1]Tomball Tex. Type | West Tex.-N. Mex. | [2]Gulf Coast (Tex.-La.) | [3]Some La. Gulf Areas | Jennings, La. | [4]Anahuac, Tex. Type | [5]Refugio, Tex. Type | [6]Mirando, Tex. Type | [8]Salt Creek, Wyo. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17–17.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 18–18.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 19–19.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | *$0.53 | *$0.79 | *$0.79 | ..... | *$0.74 | *$0.79 | *$0.74 | ..... |
| 20–20.9 | $0.60 | ..... | ..... | ..... | ..... | ..... | ..... | .55 | .82 | .82 | ..... | .77 | .82 | .77 | ..... |
| 21–21.9 | .63 | ..... | ..... | ..... | ..... | ..... | ..... | .57 | .85 | .85 | ..... | .80 | .85 | .80 | ..... |
| 22–22.9 | .66 | ..... | ..... | ..... | ..... | ..... | *$0.95 | .59 | .88 | .88 | ..... | .83 | .88 | .83 | ..... |
| 23–23.9 | .69 | ..... | ..... | *$0.78 | ..... | ..... | .97 | .61 | .91 | .91 | ..... | .86 | .91 | .86 | ..... |
| 24–24.9 | .72 | *$0.73 | *$0.71 | .80 | ..... | ..... | .99 | .63 | .94 | .94 | ..... | .89 | .94 | .89 | ..... |
| 25–25.9 | .75 | .75 | .73 | .82 | ..... | ..... | 1.01 | .65 | .97 | .97 | ..... | .92 | .97 | .92 | ..... |
| 26–26.9 | .78 | .77 | .75 | .84 | ..... | ..... | 1.03 | .67 | 1.00 | 1.00 | ..... | .95 | 1.00 | .95 | ..... |
| 27–27.9 | .81 | .79 | .77 | .86 | ..... | ..... | 1.05 | .69 | 1.02 | 1.02 | ..... | .97 | 1.02 | .97 | ..... |
| 28–28.9 | .84 | .81 | .79 | .88 | *$0.72 | *$0.67 | 1.07 | .71 | 1.04 | 1.04 | ..... | .99 | 1.04 | .99 | *$0.86 |
| 29–29.9 | .87 | .83 | .81 | .90 | .74 | .69 | 1.09 | .73 | 1.06 | 1.06 | ..... | 1.01 | 1.06 | 1.01 | .88 |
| 30–30.9 | .90 | .85 | .83 | .92 | .76 | .71 | 1.11 | .75 | 1.08 | 1.08 | ..... | 1.03 | 1.08 | 1.03 | .90 |
| 31–31.9 | .92 | .87 | .85 | .94 | .78 | .73 | 1.13 | .77 | 1.10 | 1.10 | *$0.87 | 1.05 | 1.10 | 1.05 | .92 |
| 32–32.9 | .94 | .89 | .87 | .96 | .80 | .75 | 1.15 | .79 | 1.12 | 1.12 | .89 | 1.07 | 1.12 | 1.07 | .94 |
| 33–33.9 | .96 | .91 | .89 | .98 | .82 | .77 | 1.17 | .81 | 1.14 | 1.14 | .91 | 1.09 | 1.14 | 1.09 | .96 |
| 34–34.9 | .98 | .93 | .91 | 1.00 | .84 | .79 | 1.19 | .83 | 1.16 | †1.16 | .93 | 1.11 | 1.16 | 1.11 | .98 |
| 35–35.9 | 1.00 | .95 | .93 | 1.02 | .86 | .81 | 1.21 | .85 | 1.18 | ..... | .95 | 1.13 | 1.18 | 1.13 | 1.00 |
| 36–36.9 | 1.02 | .97 | .95 | 1.04 | .88 | .83 | 1.23 | .87 | 1.20 | ..... | .97 | 1.15 | 1.20 | 1.15 | 1.02 |
| 37–37.9 | 1.04 | .99 | .97 | 1.06 | .90 | .85 | 1.25 | .89 | 1.22 | ..... | .99 | 1.17 | 1.22 | 1.17 | 1.04 |
| 38–38.9 | 1.06 | 1.01 | .99 | 1.08 | .92 | .87 | 1.27 | .91 | 1.24 | ..... | 1.01 | 1.19 | 1.24 | 1.19 | 1.06 |
| 39–39.9 | 1.08 | 1.03 | 1.01 | 1.10 | .94 | .89 | 1.29 | .93 | 1.26 | ..... | 1.03 | 1.21 | 1.26 | 1.21 | 1.08 |
| 40 and above | 1.10 | 1.05 | 1.03 | 1.12 | .96 | .91 | 1.31 | .95 | 1.28 | ..... | 1.05 | 1.23 | 1.28 | 1.23 | 1.10 |

*Minimum price and applies also to purchases of lower gravity.

†Maximum price and applies also to purchases of higher gravity.

[1] Tomball, Raccoon Bend (Deep Sand) and Satsuma.

[2] Includes Goose Creek, Sugarland, West Columbia, Thompsons, Mykawa, Amelia, Webster, and Clear Lake fields.

[3] Includes Berwick Bay, Bay St. Elaine, Caillou Island, Dog Lake, Four Isle, Gillis, Horseshoe Bayou, Iberia, Jefferson Island, Lake Barre, Lake Pelto, Leesville and Port Barre fields.

[4] Anahuac, Dickinson, Gillock, Cedar Point, Fairbanks, Turtle Bay, Hull, Liberty, Orange, Pierce Junction, Barbers Hill and Raccoon Bend (shallow sand) fields.

[5] Includes Saxet, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

[6] Includes Duval, Jim Hogg, Jim Wells, Webb and Zapata counties, Texas, and Heyser and Placedo fields.

[7] Oklahoma Pipe Line (Carter Oil) and Magnolia schedules.

[8] Includes La Barge, Midway Dome, Dutton Creek.

### Mid-Continent Flat Prices

| | Flat Price | Date Posted |
|---|---|---|
| **Arkansas:** | | |
| Smackover | $0.73 | 10–12–38 |
| **Louisiana:** | | |
| Garden Island | 1.24 | 10–12–38 |
| Gibson | 1.04 | 10–11–38 |
| Lafitte | 1.04 | 10–12–38 |
| **Texas:** | | |
| East Texas | 1.10 | 10–12–38 |
| Talco | .55 | 10–12–38 |
| Livingston, Cleveland | 1.10 | 10–12–38 |
| Van | .93 | 10–12–38 |
| Pettus | 1.29 | 10–12–38 |
| Pecos County | .78 | 10–12–38 |
| Pecos Shallow | .65 | 10–12–38 |
| Luling | .87 | 10–12–38 |
| Lytton Springs | .99 | 10–12–38 |
| Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski | .96 | 10–11–38 |
| Flour Bluff | 1.27 | 10–11–38 |
| Seabreeze, Willow Slough, La Belle, Hardin | 1.00 | 10–13–38 |
| Clay Creek | .85 | 10–13–38 |
| Conroe | 1.27 | 10–11–38 |
| Cayuga | .81 | 10–19–38 |
| Long Lake | 1.08 | 10–19–38 |

### Middle West Prices

| | | |
|---|---|---|
| Lima, Ohio | $0.90 | 10–13–38 |
| Illinois | 1.05 | 10–13–38 |
| Illinois Basin | 1.15 | 10–13–38 |
| Centralia, Illinois | 1.15 | 10–13–38 |
| Princeton, Indiana | 1.05 | 10–13–38 |
| Western Kentucky | 1.10 | 10–13–38 |
| Kentucky River, Eastern Kentucky | 1.20 | 10– –38 |
| Big Sandy River, Eastern Kentucky | 1.12 | 10– –38 |

### Michigan Prices

| | Flat Price | Date Posted |
|---|---|---|
| Porter, Greendale, Crystal | $0.92½ | 10–13–38 |
| Buckeye, Bentley, Edenville and Beaverton | .90 | 10–13–38 |
| Freeman; Bloomingdale | .82 | 10–13–38 |
| West Branch-Arenac-Ogemaw | .70 | 12–19–38 |

### Rocky Mountain States Prices

| | | |
|---|---|---|
| **Colorado:** | | |
| Cannon City, Ft. Collins, Wellington, Moffat and Florence | .90 | 10–11–38 |
| Iles, Light | .98 | 10–11–38 |
| Iles, Heavy | .92 | 10–11–38 |
| **Montana:** | | |
| Cat Creek—Cut Bank | 1.10 | 10–11–38 |
| Sunburst | .90 | 11–16–37 |
| Dry Creek | .92 | 10–11–38 |
| **New Mexico:** | | |
| Artesia | .77 | 10–11–38 |
| Hogback | 1.00 | 10–11–38 |
| **Wyoming:** | | |
| Big Muddy | .98 | 10–11–38 |
| Byron | .55 | 10–11–38 |
| Elk Basin | .90 | 10–11–38 |
| Frannie, Light | .55 | 10–11–38 |
| Frannie, Heavy | .42 | 10–11–38 |
| Garland | .50 | 10–11–38 |
| Grass Creek, Light | .90 | 10–11–38 |
| Grass Creek, Heavy | .40 | 10–11–38 |
| Hamilton Dome | .35 | 10–11–38 |
| Lance Creek | .77 | 10–11–38 |
| Mill Creek | .72 | 10–11–38 |
| Oregon Basin | .50 | 10–11–38 |
| Osage | 1.30 | 10–11–38 |
| Poison Spider | .59 | 10–11–38 |
| Rock Creek | 1.00 | 10–11–38 |
| Tensleep | .646 | 10–11–38 |

### Pennsylvania Prices

| | Flat Price | Date Posted |
|---|---|---|
| Bradford-Allegheny | $1 88 | 2 2-39 |
| National Transit Lines | 1.88 | 2- 2-39 |
| Sw. Pa. Pipe Line | 1 53 | 2 2-39 |
| Eureka Pipe Line | 1.47 | 2- 2 39 |
| Buckeye Pipe Line | 1 45 | 2- 2-39 |
| Corning Grade, Ohio | 1.02 | 1–24–39 |

### Major Price Changes

| | Penna. (Nat. Tr.) | Mid-Cont. (36 Gr.) | Calif. (26 Gr.) |
|---|---|---|---|
| June 19, 1933 | Up 10 | Up 19 | ..... |
| June 26, 1933 | Up 10 | ..... | Up 9-12 |
| July 6, 1933 | Up 13 | Up 10 | ..... |
| July 17, 1933 | Up 15 | ..... | ..... |
| July 28, 1933 | Up 15 | ..... | ..... |
| Aug. 11, 1933 | Up 10 | ..... | ..... |
| Aug. 24, 1933 | ..... | Up 10 | ..... |
| Aug. 30, 1933 | Up 15 | ..... | ..... |
| Sept. 6, 1933 | Up 10 | Up 10 | Up 15 |
| Sept. 8, 1933 | ..... | Up 15 | ..... |
| May 1, 1934 | Up 10 | ..... | ..... |
| Nov. 6, 1934 | Cut 25 | ..... | ..... |
| Dec. 6, 1934 | Cut 25 | ..... | ..... |
| Jan. 4, 1935 | Up 15 | ..... | ..... |
| Feb. 4, 1935 | Up 15 | ..... | ..... |
| May 16, 1935 | Cut 15 | ..... | ..... |
| June 26, 1935 | Cut 15 | ..... | ..... |
| July 16, 1935 | Cut 10 | ..... | ..... |
| Aug. 29, 1935 | ..... | ..... | Cut *1 |
| Sept. 6, 1935 | Up 5 | ..... | ..... |
| Oct. 29, 1935 | Up 15 | ..... | ..... |
| Nov 1, 1935 | ..... | ..... | Up *28 |
| Nov. 18, 1935 | Up 15 | ..... | ..... |
| Dec. 6. 1935 | ..... | ..... | Up *9 |
| Jan. 9. 1936 | ..... | Up 10 | ..... |
| Jan. 13, 1936 | Up 15 | ..... | ..... |
| Feb 26, 1936 | ..... | ..... | Up †5 |
| Dec. 28, 1936 | Up 12 | ..... | ..... |
| Jan. 28, 1937 | ..... | Up 12 | ..... |
| Feb. 24, 1937 | Up 10 | ..... | ..... |
| June 7, 1937 | Up 15 | ..... | ..... |
| Sept. 1, 1937 | Cut 22 | ..... | ..... |
| Oct. 12, 1937 | Cut 25 | ..... | ..... |
| Dec. 1, 1937 | Cut 15 | ..... | ..... |
| March 7, 1938 | Cut 17 | ..... | ..... |
| June 13, 1938 | Cut 25 | ..... | ..... |
| Sept. 1, 1938 | Cut 12 | ..... | ..... |
| Oct. 11, 1938 | ..... | Cut 20 | ..... |
| Jan. 21, 1939 | Up 12 | ..... | ..... |
| Feb. 2, 1939 | Up 8 | ..... | ..... |

* Signal Hill 26 gravity.
† Seal Beach 26 gravity.

### Crude Production Taxes

Oklahoma—Five percent of gross value less royalty interests.
Texas—2¾ cents or 2¾ percent, whichever is higher.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 percent of gross market values.
Montana—Two percent of gross value at well and 3/8 of 1c per barrel.
New Mexico—Severance tax of 2 percent on oil and gas.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents an acre on proved lands.

12 cents in the original increase and 8 cents more on February 2. Thus the present price is $1.88 a barrel, 20 cents higher than at the begining of the year.

Oil in southwest Pennsylvania lines was raised 9 cents on January 21 and 10 cents more on February 2, making the current price $1.53 a barrel.

Oil in Eureka lines also was raised 9 cents January 21 and 10 cents February 2, bringing the price up to $1.47.

Crude purchased for Buckeye lines was raised 12 cents January 21 and 15 cents more on February 2, the present price being $1.45 a barrel.

Corning grade was raised 5 cents to $1.02 on January 24, and had not been advanced again at the time of the second revisions for Pennsylvania grade crude.

The principal product made from Pennsylvania grade crude is lubricating oil. Demand for industrial lubricants has improved appreciably in the past few months, in consequence of the general business recovery and the increase of industrial production, and refiners of Pennsylvania grade crude lately have been obliged to take crude out of storage in fulfilling their requirements, whereas they were adding to crude storage in the greater part of 1938.

### Gasoline Prices

U. S. motor gasoline ranged in the Oklahoma market last week about as follows: 62 octane and below, 3⅝ to 4¼ cents a gallon; 63 to 66 octane, 3⅞ to 4½ cents; 67 to 69 octane, 4 to 4⅝ cents; 70 to 72 octane, 4⅛ to 5 cents.

Corresponding prices in the Chicago market were 3¼ to 4 cents, 3½ to 4½ cents, 3¾ to 4½ cents and 4 to 4⅝ cents.

In East Texas, 60-62, 400 end point gasoline was priced generally at 4 cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 3⅞ to 4¼ cents a gallon for the 41-43 water white grade, and from 4 to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3½ to 4⅛ cents and 3¾ to 4⅜ cents.

### Natural Gasoline

Natural gasoline, grade 26-70, was priced generally in the Mid-Continent markets f.o.b. refineries at 2¾ cents a gallon, and sales were reported at the same price, f.o.b. Breckenridge, Texas.

Fuel oil prices were down ⅛ cent a gallon in a few instances last week. In the Chicago market range oil was priced from 3⅜ to 4 cents, a gallon. The No. 1 white oil was priced from 3⅜ to 3⅞ cents, and No. 1 straw from 3⅜ to 3¾ cents. No. 2 straw was 3¼ to 3⅝ cents. No. 3 oil was 3 to 3⅜ cents. No. 5 oils were 57½ to 65 cents a barrel. The No. 6 oil was quoted at 30 to 45 cents.

## *Barnsdall restores price in stripper-well area*

Restoration of the posted price for oil in the stripper area of western Osage and eastern Tulsa counties became effective February 1 when Barnsdall Oil Company removed its charge of 12 cents a barrel for the area. In October with the closing of the refining plant of Barnsdall Refining Corporation at Barnsdall this area was left without a market. When the plant resumed operation the gathering charge was effective.

Meanwhile producers found a market for part of the oil through other purchasers.

## *Oklahoma strippers seek new markets*

Oklahoma stripper well operators, at a meeting held January 28 at Ardmore, launched a campaign for new markets, new outlets for production and general recognition as a unit of the petroleum industry. Outcome of the meeting, sponsored by the newly-organized Stripper Well Association of Oklahoma and which will be followed by similar gatherings in other parts of the state, was authorization of a committee to meet with the oil and gas committees of the Oklahoma Senate and House in an attempt to gain remedial legislation.

Part of the burden of finding new uses and markets for crude oil was checked back to the communities and civic organizations by Roy M. Johnson, southern Oklahoma independent operator, who outlined the organization's program.

"It costs 10 times as much to produce a barrel of oil from a stripper

## CALIFORNIA CRUDE OIL PRICES

**(Posted February 26, 1936; except El Segundo and Wilmington, posted October 15, 1937, and Greeley and Canal posted July, 1938). All gravity above those quoted take highest prices of that field.**

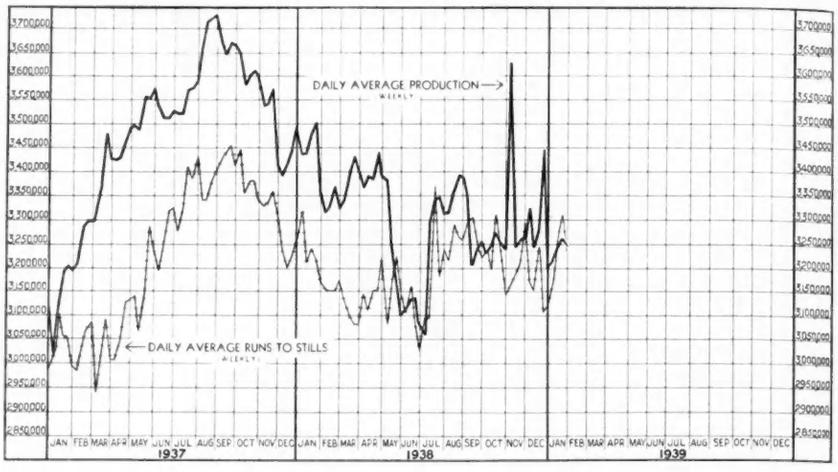
| Gravity | El Segundo and Signal Hill | Seal Beach Alamitos Heights | Huntington Beach | Inglewood | Playa Del Rey | Olinda Brea Canyon | Athens Rosecrans | Torrance | Richfield | Whittier East Coyote La Habra | Montebello | West Coyote Hills | Santa Fe Springs | New Hall McKittrick Kern River Round Mountain | Greeley, Canal | Mountain View | Midway-Sunset Buena Vista Hills Elk Hills | Lost Hills | Coalinga | Wheeler Ridge | Wilmington |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14–14.9 | $0.80 | $0.79 | $0.78 | $0.79 | $0.80 | $0.76 | ..... | $0.80 | $0.76 | $0.76 | $0.77 | $0.78 | ..... | $0.70 | .... | .... | $0.70 | $0.70 | $0.70 | .... | $0.75 |
| 15–15.9 | .80 | .79 | .78 | .79 | .80 | .76 | ..... | .80 | .76 | .76 | .77 | .78 | ..... | .70 | .... | .... | .70 | .70 | .70 | .... | .75 |
| 16–16.9 | .80 | .79 | .78 | .79 | .80 | .76 | ..... | .80 | .76 | .76 | .77 | .78 | ..... | .70 | .... | .... | .70 | .70 | .70 | .... | .75 |
| 17–17.9 | .80 | .79 | .78 | .81 | .80 | .76 | ..... | .80 | .76 | .76 | .77 | .78 | ..... | .70 | .... | .... | .70 | .70 | .70 | .... | .77 |
| 18–18.9 | .80 | .79 | .78 | .84 | .80 | .78 | ..... | .82 | .76 | .76 | .77 | .78 | ..... | .70 | .... | .... | .70 | .70 | .70 | .... | .79 |
| 19–19.9 | .82 | .79 | .82 | .87 | .84 | .81 | ..... | .85 | .76 | .78 | .77 | .78 | ..... | .70 | .... | $0.70 | .74 | .74 | .71 | $0.70 | .82 |
| 20–20.9 | .85 | .79 | .85 | .90 | .88 | .84 | ..... | .88 | .78 | .82 | .77 | .80 | ..... | .... | .... | .70 | .78 | .78 | .72 | .70 | .85 |
| 21–21.9 | .88 | .79 | .89 | .93 | .93 | .88 | ..... | .91 | .80 | .85 | .77 | .84 | $0.78 | .... | .... | .73 | .82 | .82 | .74 | .70 | .88 |
| 22–22.9 | .92 | .82 | .92 | .96 | .98 | .92 | ..... | .93 | .84 | .89 | .79 | .88 | .78 | .... | .... | .77 | .87 | .86 | .78 | .72 | .92 |
| 23–23.9 | .95 | .86 | .96 | .99 | 1.02 | .96 | $0.84 | .96 | .88 | .93 | .82 | .92 | .78 | .... | .... | .80 | .92 | .90 | .82 | .76 | .95 |
| 24–24.9 | .99 | .91 | 1.00 | 1.02 | 1.06 | .99 | .88 | .99 | .91 | .96 | .85 | .96 | .82 | .... | .... | .84 | .97 | .94 | .86 | .79 | .99 |
| 25–25.9 | 1.03 | .95 | 1.03 | 1.05 | 1.11 | 1.03 | .93 | 1.02 | .95 | ... | .89 | .99 | .86 | .... | .... | .88 | 1.01 | .98 | .90 | .83 | 1.03 |
| 26–26.9 | 1.06 | 1.00 | 1.07 | 1.09 | 1.16 | 1.06 | .98 | 1.05 | .98 | ... | .92 | 1.03 | .90 | Elwood | .... | .91 | 1.06 | 1.02 | .... | .... | 1.06 |
| 27–27.9 | 1.10 | 1.05 | 1.11 | 1.12 | ..... | 1.10 | 1.03 | .... | 1.02 | ... | .96 | 1.06 | .95 | Ter- | $0.91 | .95 | 1.10 | 1.06 | .... | .... | 1.10 |
| 28–28.9 | 1.14 | 1.10 | 1.14 | 1.15 | ..... | 1.14 | 1.07 | .... | 1.06 | ... | .99 | 1.10 | .99 | race | .94 | .99 | 1.15 | 1.10 | .... | .... | 1.14 |
| 29–29.9 | 1.17 | 1.15 | 1.18 | 1.18 | F.O.B. | 1.17 | 1.12 | .... | 1.09 | ... | 1.03 | 1.14 | 1.03 | .... | .98 | 1.02 | 1.20 | 1.14 | .... | .... | 1.17 |
| 30–30.9 | 1.21 | 1.19 | 1.22 | 1.21 | Pipe | 1.21 | 1.17 | .... | .... | ... | 1.07 | 1.17 | 1.08 | F.O.B. | 1.02 | 1.06 | 1.25 | 1.18 | .... | .... | 1.21 |
| 31–31.9 | ..... | ..... | ..... | 1.24 | Line | 1.24 | 1.22 | Kettleman Hills | | | 1.11 | 1.21 | 1.12 | Ship | 1.06 | 1.09 | 1.29 | .... | .... | .... | .... |
| 32–32.9 | ..... | ..... | ..... | 1.27 | ..... | 1.27 | 1.27 | | | | 1.14 | 1.25 | 1.16 | .... | 1.09 | 1.13 | 1.34 | .... | .... | .... | .... |
| 33–33.9 | ..... | ..... | ..... | ..... | ..... | ..... | 1.32 | 1.19 | | | 1.18 | 1.28 | 1.20 | 1.28 | 1.13 | 1.17 | 1.38 | .... | .... | .... | .... |
| 34–34.9 | ..... | ..... | ..... | ..... | ..... | ..... | 1.37 | .... | 1.23 | ... | 1.22 | 1.32 | 1.25 | 1.32 | 1.17 | 1.20 | ..... | .... | .... | .... | .... |
| 35–35.9 | ..... | ..... | ..... | ..... | ..... | ..... | 1.42 | .... | 1.27 | ... | 1.25 | .... | 1.29 | 1.35 | 1.20 | .... | ..... | .... | .... | .... | .... |
| 36–36.9 | ..... | ..... | ..... | ..... | ..... | ..... | 1.46 | .... | 1.31 | ... | 1.29 | .... | 1.33 | 1.39 | 1.24 | .... | ..... | .... | .... | .... | .... |
| 37–37.9 | ..... | ..... | ..... | ..... | ..... | ..... | 1.51 | .... | 1.35 | ... | 1.32 | .... | 1.37 | 1.43 | 1.28 | .... | ..... | .... | .... | .... | .... |
| 38–38.9 | ..... | ..... | ..... | ..... | ..... | ..... | 1.56 | .... | 1.39 | ... | 1.36 | .... | 1.42 | .... | 1.31 | .... | ..... | .... | .... | .... | .... |
| 39–39.9 | ..... | ..... | ..... | ..... | ..... | ..... | 1.61 | .... | 1.43 | ... | 1.40 | .... | ..... | .... | 1.35 | .... | ..... | .... | .... | .... | .... |
| 40–40.9 | ..... | ..... | ..... | ..... | ..... | ..... | 1.66 | .... | .... | ... | 1.43 | .... | ..... | .... | 1.39 | .... | ..... | .... | .... | .... | .... |
| 41–41.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... | ... | .... | .... | ..... | .... | 1.43 | .... | ..... | .... | .... | .... | .... |
| 42–42.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... | ... | .... | .... | ..... | .... | 1.46 | .... | ..... | .... | .... | .... | .... |
| 43–43.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... | ... | .... | .... | ..... | .... | 1.50 | .... | ..... | .... | .... | .... | .... |
| 44–44.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... | ... | .... | .... | ..... | .... | 1.54 | .... | ..... | .... | .... | .... | .... |
| 45–45.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... | ... | .... | .... | ..... | .... | 1.57 | .... | ..... | .... | .... | .... | .... |
| 46–46.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... | ... | .... | .... | ..... | .... | 1.61 | .... | ..... | .... | .... | .... | .... |
| 47–47.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... | ... | .... | .... | ..... | .... | 1.65 | .... | ..... | .... | .... | .... | .... |
| 48–48.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .... | .... | ... | .... | .... | ..... | .... | 1.68 | .... | ..... | .... | .... | .... | .... |

well as it does from a flowing well," Johnson said. "The additional cost goes to labor, and the pay rolls are spent in the communities where the oil is produced. The state of Oklahoma has 56,000 stripper wells, and something like one-tenth of them are in Carter County. Those who profit out of these wells of small production are labor, local merchants, the state, the general tax payer and the owner of the wells."

Difficulties of stripper well operators were reviewed, and attention called to pipe line proration, price cuts and statements of major purchasers that they do not care for the low-grade oil.

W. A. Goforth, Tulsa, is president of the organization, and Charles E. Clowe, Ardmore, executive manager.

## United States Crude Oil Production and Refinery Runs


DAILY AVERAGE PRODUCTION—>
WEEKLY
<—DAILY AVERAGE RUNS TO STILLS
WEEKLY
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1937
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1938
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1939

### *Statistics show declines in production and runs*

The latest weekly statistics of the petroleum industry showed curtailment of crude oil production and refinery runs, reductions of the stocks of fuel oils and crude oil, and an increase in gasoline inventories.

Production of crude oil in the United States in the week ended January 28 averaged 3,248,250 barrels daily, or about 16,000 barrels a day less than in the previous week and 3.2 percent less than in the corresponding week last year. The output was about 20,000 barrels under the indicated market demand for domestic crude, as estimated for January by the Bureau of Mines.

Crude oil runs to refinery stills were down 75,000 barrels in the week ended January 28, having averaged 3,235,000 barrels daily. The runs were, however, 2.1 percent heavier than those of the corresponding week last year.

Although the production of gasoline at refineries was down a little in the week of January 28, demand was adversely affected by the cold weather, and nearly 2,000,000 barrels of gasoline were added to storage. The stocks rose to 77,279,000 barrels, and were then 8.7 percent under the level of a year before.

Gas and fuel oil stocks, meanwhile, were reduced nearly 2,000,000 barrels, having been brought down to 139,349,000 barrels, as demand continued large. At the new level, the stocks of fuel oil were 17.3 percent larger than one year before. But that gain was largely justified, as fuel oil consumption is running materially higher this year than last year.

Crude oil stocks were further reduced approximately 700,000 barrels in the week ended January 21, having been brought down to 271,110,000 barrels, or almost back to the 17-year low that was reached in mid-December. The crude stocks are about 12 percent lower now than a year ago.

### *Independents' committees may approve curtailment*

Reports are current in Los Angeles that the "fact finding committee" and the "emergency executive committee" of the independent operators will report within 10 days that they are of the opinion that curtailment problems of California are being handled fairly and correctly.

Numerous meetings were held in many of the so-called "hot spots" where alleged excessive production was said to be embarrassing those sponsoring curtailment. Most of these fields have been cooperating with the oil umpire and the central committee of California Oil Producers, and the operators have indicated their willingness to abide by rules and regulations laid down by responsible parties.

At the recent regular meeting of the central committee, it went on record as opposing any transfer of allowables. The resolution was introduced by Ross McCollum, member of the "emergency committee." It explained that the practice of transferring allowables had grown up to where certain operators had taken it upon themselves to transfer allowables from one field to another, especially in cases where those transfers protect the transferring operator from unfair drainage by non-cooperating offset wells. It also stated that the practice had been extended to where operators having production in different fields, or areas, where defensive transfers are not needed, make transfers which aggressively shift the balance of production in the field to which the product is transferred, disturbing the equities in that field and creating a situation which is unfair to the other operators.

During the past 30-day investigation, one-day shut down programs were worked out for the Signal Hill and Santa Fe Springs fields. This resulted in considerable curtailment.

## Trends of United States Production and Stocks

**Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports**

| WEEK ENDED | Crude Oil Production (Barrels Daily) | Crude Runs to Stills (Barrels Daily) | Crude Oil Stocks (Barrels) | Gasoline Stocks (Barrels) | Gas & Fuel Oil Stocks (Barrels) |
|---|---|---|---|---|---|
| September 25, 1937 | 3,666,300 | *3,455,000 | 307 974,000 | 65,620,000 | 116,472,000 |
| January 1, 1938 | 3,436,600 | 3,320,000 | 303,468,000 | 77,291,000 | 118,660,000 |
| January 29 | 3,357,650 | 3,170,000 | 304,286,000 | 84,844,000 | 118,793,000 |
| February 26 | 3,322,800 | 3,170,000 | 305,167,000 | 90,719,000 | 120,958,000 |
| March 19 | 3,322,550 | 3,080,000 | 306,380,000 | *93,192,000 | 122,067,000 |
| March 26 | 3,405,600 | 3,080,000 | 307,557,000 | 92,858,000 | 122,979,000 |
| April 30 | 3,396,150 | 3,215,000 | 307,147,000 | 91,339,000 | 128,270,000 |
| May 28 | 3,098,650 | 3,150,000 | †301,583,000 | 87,946,000 | 134,315,000 |
| June 25 | 3,083,900 | 3,025,000 | 293,463,000 | 82,412,000 | 137,801,000 |
| July 30 | 3,316,400 | 3,240,000 | 288,514,000 | 76,864,000 | 141,294,000 |
| August 27 | 3,388,500 | 3,255,000 | 285,029,000 | 71,754,000 | 146,926,000 |
| September 24 | 3,251,150 | 3,220,000 | 280,278,000 | 68,605,000 | 150,468,000 |
| October 1 | 3,231,800 | 3,235,000 | 280,852,000 | 68,602,000 | 151,759,000 |
| October 29 | 3,237,500 | 3,145,000 | 275,824,000 | 67,590,000 | 153,719,000 |
| November 12 | 3,243,250 | 3,180,000 | 273,394,000 | 67,551,000 | *154,666,000 |
| November 26 | 3,260,900 | 3,295,000 | 270,563,000 | 68,628,000 | 153,634,000 |
| December 10 | 3,245,100 | 3,150,000 | †269,509,000 | 68,587,000 | 150,779,000 |
| December 31 | 3,201,450 | 3,115,000 | 273,024,000 | 71,695,000 | 144,823,000 |
| January 7 | 3,214,900 | 3,170,000 | 272,325,000 | 72,818,000 | 143,333,000 |
| January 14 | 3,243,600 | 3,260,000 | 271,819,000 | 73,752,000 | 142,460,000 |
| January 21 | 3,264,450 | 3,310,000 | 271,110,000 | 75,455,000 | 141,091,000 |
| January 28, 1939 | 3,248,250 | ‡3,235,000 | ..... | 77,279,000 | 139,349,000 |
| January 29, 1938 | 3,357,650 | 3,170,000 | †304,424,000 | 84,844,000 | 118,793,000 |
| Change in past year | —3.2% | +2.1% | —12.3% | —8.7% | +17.3% |

* All time peak. † Lowest for 17 years. ‡ Stocks, January 22, 1938.

# Crude Production

## United States output declines 43,325 barrels daily to 3,221,150 barrels . . .Above Bureau estimate

OUTPUT of the oil fields of the United States during the week ended February 4 decreased to 3,221,150 barrels daily. That was 43,325 barrels daily less than in the previous week, but 350 barrels above the market demand for domestic crude as estimated by the Bureau of Mines.

The decrease in output resulted from declines in all the principal producing states.

California was down 15,000 barrels daily, having averaged 608,800 barrels a day. That was 28,800 barrels more than the federal allocation and 3800 barrels more than the recommendation of the Central Committee of California Oil Producers.

Louisiana averaged 260,275 barrels daily, or 2925 barrels less than in the previous week and was 13,475 barrels below the Bureau of Mines recommendation and 5135 barrels below the state proration program.

Kansas likewise showed a small decline, the daily production having averaged 140,125 barrels, which was 8450 barrels less than in the previous week, 8475 barrels less than the estimated demand and 13,775 barrels less than state allowables.

Texas showed a small fluctuation, the daily output having decreased 800 barrels to 1,290,800 barrels. At this new level it remained 6700 barrels under the Bureau of Mines estimate and 47,530 under the allowable prescribed by the state.

Oklahoma registered a decrease of 7650 barrels, having averaged 423,000 barrels a day. That was 59,500 barrels less than the indicated demand and 5000 barrels less than the state allowable.

### *Gasoline situation*

[*Continued from page 12*]

winter may go out like a lion after having behaved like a lamb, and that gasoline stocks may spurt upward in February and March, despite any curtailment of plant output.

However, it now appears doubtful that future severe weather will compensate for past mild weather and bring fall-winter gasoline demand down accordingly. And so, in view of the better than expected fall-winter consumption, the chart as presented in this issue is revised to offer a less conservative and perhaps more practical pattern of economically desirable refinery operations in the remainder of the fall-winter season.

#### March 31 Level

According to the chart, approximately 80,000,000 barrels is adopted as the economically desirable level for gasoline inventories as of March 31; and it is calculated that such an inventory situation could be achieved if cumulative refinery runs from October 1 to March 31 averaged 3,150,000 barrels. Actually, however, the runs since October 1 have averaged 3,207,000 barrels daily (up to January 28) as indicated by the last red dot on the right. And a continuation of the runs at that same rate in February and March would result in a gasoline inventory of approximately 85,000,000 barrels on March 31, as determined by reading the scale on the right side of the chart.

Furthermore, in the week ended January 28, the runs to stills averaged 3,235,000 barrels daily, or 28,000 barrels a day more than the average since October 1, and a continuation of this trend of the week until March 31 would cause addition of another 2,000,000 bar-

## United States Crude Oil Production

### Estimates Compiled by The OIL WEEKLY

| DISTRICT OR STATE | Bureau of Mines Recommendation (Daily in Feb.) | State Allowable in Feb. | BARRELS DAILY FOR WEEK ENDED Feb. 4 | Jan. 28 |
|---|---|---|---|---|
| TEXAS— | | | | |
| Texas Panhandle | | | 63,900 | 64,100 |
| North Texas | | | 79,300 | 80,400 |
| West Central Texas | | | 30,400 | 30,600 |
| West Texas | | | 205,700 | 205,100 |
| East Central Texas | | | 91,500 | 92,100 |
| East Texas Field | | | 372,800 | 372,800 |
| South Texas | | | 234,300 | 233,400 |
| Texas Gulf Coast | | | 212,900 | 213,100 |
| Total Texas | 1,297,500 | 1,338,330† | 1,290,800 | 1,291,600 |
| CALIFORNIA— | | | | |
| Long Beach | | | 50,100 | 49,000 |
| Santa Fe Springs | | | 30,000 | 29,800 |
| Huntington Beach | | | 26,400 | 28,800 |
| Dominguez | | | 21,500 | 22,500 |
| Ventura Avenue | | | 33,300 | 33,600 |
| Midway-Sunset | | | 49,700 | 60,200 |
| Kettleman Hills | | | 56,700 | 56,700 |
| Wilmington | | | 83,900 | 85,400 |
| Others | | | 257,200 | 257,800 |
| Total California | 580,000 | 605,000* | 608,800 | 623,800 |
| OKLAHOMA— | | | | |
| Oklahoma City | | | 90,925 | 99,875 |
| Seminole Area | | | 95,075 | 95,125 |
| Fitts | | | 32,775 | 32,550 |
| Others | | | 204,225 | 203,100 |
| Total Oklahoma | 482,500 | 428,000 | 423,000 | 430,650 |
| LOUISIANA— | | | | |
| North Louisiana | | | 69,375 | 71,900 |
| South Louisiana | | | 190,900 | 191,300 |
| Total Louisiana | 246,800 | 255,140 | 260,275 | 263,200 |

| DISTRICT OR STATE | Bureau of Mines Recommendation (Daily in Feb.) | State Allowable in Feb. | BARRELS DAILY FOR WEEK ENDED Feb. 4 | Jan. 28 |
|---|---|---|---|---|
| KANSAS— | | | | |
| Burrton-Haven | | | 8,175 | 8,050 |
| Russell County | | | 20,700 | 22,050 |
| Silica | | | 8,150 | 10,375 |
| Others | | | 103,100 | 108,100 |
| Total Kansas | 148,600 | 153,900 | 140,125 | 148,575 |
| NEW MEXICO | 99,600 | 102,600 | 98,600 | 98,200 |
| MICHIGAN | 47,200 | | 50,600 | 51,100 |
| ARKANSAS | 48,200 | | 52,350 | 51,850 |
| MOUNTAIN STATES— | | | | |
| Wyoming | 57,100 | | 49,100 | 51,200 |
| Montana | 12,100 | | 13,900 | 13,600 |
| Colorado | 3,600 | | 4,100 | 4,200 |
| Total Mountain States | 72,800 | | 67,100 | 69,000 |
| EASTERN STATES— | | | | |
| Pennsylvania Grade | | | 66,400 | 68,900 |
| Southern Illinois (New Pools) | | | 130,400 | 129,500 |
| Illinois-Indiana (Old Pools) | | | 6,900 | 13,400 |
| Others, Eastern | | | 25,800 | 24,800 |
| Total Eastern States | 196,800 | | 229,500 | 236,600 |
| Total United States | 3,220,000 | | 3,221,150 | 3,264,475 |

* Recommendation of Central Committee of California Oil Producers.

† Daily average, considering Saturday and Sunday shut-downs.

rels to storage, or a build-up to a total of approximately 87,000,000 barrels.

If cumulative daily runs for the six months, October 1 to March 31, were to be held to the suggested desirable level of 3,150,000 barrels, so as to hold gasoline stocks to 80,000,000 barrels on March 31 only about 2,500,000 barrels could be added to storage during February and March, and it would be necessary to curtail refinery runs during those two months to an average of 3,042,000 barrels daily, as compared with the runs of 3,135,000 barrels daily in the week ended January 28.

It is quite probable, however, that considerably more than 2,500,000 barrels of gasoline will be added to storage in February and March, and it appears likely that the inventories will total 86,000,000 barrels or more on March 31.

Last spring the gasoline stocks were built up to an all-time peak of 92,000,000 barrels, and the important surplus included in that total probably was largely responsible for the unstable market for gasoline that has continued until now.

Through benefit of mild weather, gasoline stocks now are at a fairly satisfactory level, despite heavy refinery runs in mid-winter. But the need for moderate plant output still prevails.

### *California's February allowable is unchanged*

California's February daily crude allowable will remain unchanged.

At the regular monthly meeting of the allocation committee, headed by L. L. Aubert, recommendations were that the present allowable of 600,000 barrels, with a tolerance of 5000 barrels a day, be retained for the current month. This figure coincides with the suggestion of the committee of independent oil operators that has been active the past 30 days on oil curtailment.

The assumption in Los Angeles is that a price cut looms for the petroleum industry, unless, of course, the producers are able to get their production down to the desired level.

### *Zingery maps were used in Yearbook Number*

The base maps of Oklahoma, Kansas, Arkansas, Louisiana, Texas and New Mexico used in The Oil Weekly's Yearbook-Forecast Number of January 30, 1939, to show new discoveries during 1938, were obtained from Zingery Map Company of Houston.

### *Texas to urge firm stand on expropriations*

The Texas House Committee on Oil, Gas and Mining has reported favorably on a resolution by Representative Travis Dean, which would urge the State Department at Washington to take a firm and definite stand in regard to expropriated oil properties and to demand the rest of the property or immediate payment.

The resolution now goes to the House for consideration.

# Pipe Line News

## North Permian Basin fields to be provided with an outlet to Hobbs by a 66-mile 6-inch system

### *Shell line to relieve West Texas congestion*

Relief for the congested transportation facilities now available to the oil fields in the north portion of the West Texas Permian basin is promised by the construction of a new pipe line outlet. Shell Pipe Line Corporation is surveying right-of-way for a proposed line from its trunk terminal at Hobbs, New Mexico, to the Wasson and Bennett fields, where pipe line proration has been applied for several weeks.

The project will involve between 30 and 36 miles of 6-inch main line in addition to an extensive gathering system needed to link Shell Petroleum Corporation's producing leases in the above two fields. Shell Pipe Line Corporation has been operating an 8-inch line south from Hobbs since July, 1930, and this ties into a 10-inch carrier about 5 miles southwest of the town of Eunice.

Confronted with an excess of about 2000 barrels daily above normal capacity, Humble Pipe Line Company restricted its runs effective January 20 to 85 percent of the allowable in the Wasson and Bennett fields. This cut also applies to tank trucks deliveries accepted from the Slaughter, Duggan and other isolated oil areas. The company also posted notice that it would not provide line connections to new completions unless they are drilled to fulfill lease obligations. Its 6-inch line to Hobbs was placed in service in October, 1937, and is currently connected to about 215 wells.

Aloco Oil Company, Dallas, also proposes to construct a 6-inch line from the Wasson-Bennett district to Hobbs, where connection will be made with Atlantic Pipe Line Company. This project is contingent upon the company's acquisition of producing and undeveloped leases held by The Texas Company in Yoakum County.

### *Illinois line to be made refined carrier*

Shell Petroleum Corporation's 8-inch crude oil pipe line from the Wood River, Illinois, refinery to East Chicago, Indiana, will be converted this year for transportation of gasoline and fuel oil. The plan contemplates gradual curtailment of operations at the Indiana refinery and its conversion to a refinery tank farm.

The East Chicago refinery has a capacity of 30,000 barrels of crude daily, with 21,000 barrels cracking facilities. It was used to supply marine terminals on the western ends of the Great Lakes. The Wood River refinery has a capacity of 43,000 barrels with a cracking capacity of 29,500 barrels. The change is expected to result in operating economies and more simple distribution.

The Shell company in 1938 constructed an 8-inch gasoline line from Wood River to Indianapolis, with a 6-inch extension to Toledo, Ohio. The Toledo outlet supplies Great Lakes terminals from Detroit east.

### *Valuations on Humble, Ajax, Texas lines announced*

Humble Pipe Line Company's property owned and used for common carrier purposes has been valued by the Interstate Commerce Commission at $59,700,000 as of December 31, 1934. The company owns and operates trunk and gathering lines in Texas and New Mexico that are an integral part of the Humble Oil & Refining Company system.

The commission also set a final value for rate making purposes of $11,828,000 on the property of Ajax Pipe Line Company owned and used for common carrier purposes. The company owns and operates a trunk pipe line in Oklahoma, Missouri and Illinois that forms an integral part of the Standard Oil Company of New Jersey system.

A valuation of $36,050,000 was placed last week by the Interstate Commerce Commission on properties of The Texas Pipe Line Company, owned and used for common carrier purposes. An affiliate of The Texas Corporation, the company has extensive lines in Texas and also operates in New Mexico, Louisiana and Arkansas.

Confirming a tentative valuation set March 19, 1938, the interstate commerce commission last week set a final value of $16,400,000 for rate making purposes on the properties of Great Lakes Pipe Line Company owned and used for common carrier purposes.

The company had objected to the tentative valuation, especially as to exclusion from the valuation of its operating gasoline supply of several hundred thousand barrels. Overruling the protest, the commission held the company's transportation operations are conducted through utilization, incident to delivery, of gasoline received from and in transit for shippers and that no investment in gasoline is necessary for operating purposes.

### *Plan K-M-A gathering line to serve Panhandle plant*

Panhandle Refining Company, oldest refining unit in the Wichita Falls district, proposes to construct a crude gathering system in the K-M-A field to serve its own properties and make outside purchases, with a direct trunk line to its Wichita Falls plant. The company is currently receiving oil from K-M-A through the facilities of common carrier lines, and is handling about 1000 barrels daily from the Chalk Hill deep area, Archer County. The latter oil is delivered by tank cars, and the purchase contract expires next April.

# WEEK'S DRILLING HIGHLIGHTS

## West Texas

Recent extensions call for expansion of drilling programs at North Cowden and Foster fields, Ector County. A Permian Basin wildcat caused a stir when it passed up a 10-foot section of Pennsylvanian sand showing oil to proceed to contract depth, 1000 feet lower. A Cochran County wildcat set casing after logging saturated lime at 4907 feet.

## Southwest Texas

Pumping 6 barrels at 1400 feet, a well opened a new pool in the southeastern part of Bexar County. The third Wilcox sand test at Batesville in Zavalla County proved a failure. Live Oak County reported a new Government Wells sand pool just south of Ezzell field when a test pumped 225 barrels daily from 1397 feet. In the Corpus Christi district, oil production was realized in the Riverside district of Nueces County. East White Point was extended 9000 feet west with a good producer. La Rosa was extended northeast in the 6300-foot sand, and East Alice got a northeast extension with a 5300-foot Vicksburg sand producer. North of Alice a wildcat tried to blow out at 6552 feet. A shallow pool for Victoria County was indicated as a wildcat showed for a gasser at 2890 feet.

## Michigan

A showing in the Monroe too good to pass up has stopped a test in Bay County that proposed to go to the Sylvania-Trenton. The test flowed 75 barrels of oil while drilling and has stopped to clean out and treat with acid. Eight-inch casing is set in this hole at 3120 feet and if the show at 3730-50 feet does not make a good producer it still is in position to go deeper.

### Comparison of Permits Granted for New Wells

| STATE | Week Ending Feb. 4 | Total this Mo. | Total this Year | Total this Date Last Year | 1938 Year Total |
|---|---|---|---|---|---|
| Arkansas | 3 | 3 | 19 | 29 | 247 |
| California | 15 | 15 | 116 | 125 | 1,146 |
| Louisiana | 41 | 41 | 107 | 133 | 1,214 |
| Kansas | 17 | 17 | 132 | 187 | 1,453 |
| Michigan | 23 | 23 | 86 | 59 | 953 |
| Oklahoma | 38 | 38 | 197 | 208 | 1,978 |
| Texas | 154 | 154 | 941 | 1,384 | 12,369 |
| Total | 291 | 291 | 1,598 | 2,125 | 19,360 |

## Arkansas

First deep test of the Stephens field is shut down at 6000 feet and probably will abandon as nothing encouraging has been encountered.

## New Mexico

Third oil completion at Lovington is the area's largest producer and will require three offsets. Operators in the Vacuum field are continuing study of a proposal to repressure with gas from the Monument-Eunice district, but one large lease owner is reported to be opposed to the plan.

## Illinois

A good well is indicated by cores from a well in Wayne County. Lake Centralia-Salem production records were broken when a completion flowed at rate of 3204 barrels daily. Weather conditions have made bad going in all parts of the Basin area, greatly curtailing field operations.

## Kentucky

Showing of seven feet of McClosky with good saturation in a wildcat near the bank of Ohio River promises to push the Kentucky development into Indiana at that point. The well which promises extension of Spottsville production is still being completed.

## Texas Gulf Coast

Great importance attaches to discovery of oil in the Wilcox sand at Ace, near the common corner of Polk, Hardin and Liberty counties. Following closely upon the discovery at Eola in Louisiana, it should give more impetus to work along the "trend."

## Indiana

Two miles south of Halfield, Spencer County, a wildcat stopped drilling at 1300 feet after passing two feet of Jett sand saturation. And in Warrick County a wildcat resumed drilling below 900 feet. A mile extension to Huesler Dome pool, Posey County, pumped 40 barrels on a 16-hour test.

## California

Principal efforts seem to be directed toward defining the limits of the Eocene pool of East Coalinga, but new wildcats are starting in San Joaquin Valley to assure a continuation of exploratory drilling. Also, one company has started drilling on the strength of the recent discovery of Aliso field, Los Angeles Basin. An area west of Anaheim, Los Angeles Basin, may call for considerable drilling. Kern County strikes of recent dates are calling for some current wildcatting.

### Summary of Wells Completed in the United States Week Ending February 4, 1939

| | Completions | Oil Wells | Gas Wells | Failures | Initial Production | Total 1939 | Total This Date 1938 |
|---|---|---|---|---|---|---|---|
| Alabama | 1 | ..... | ..... | 1 | ..... | 1 | ..... |
| Arkansas | 3 | 2 | ..... | 1 | 1,080 | 32 | 26 |
| California | 11 | 10 | ..... | 1 | 11,380 | 108 | 129 |
| Colorado | ..... | ..... | ..... | ..... | ..... | 2 | 2 |
| Florida | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Illinois | 93 | 66 | 2 | 25 | 17,369 | 352 | 91 |
| Indiana | ..... | ..... | ..... | ..... | ..... | 11 | 6 |
| Kansas | 25 | 21 | ..... | 4 | 24,962 | 126 | 236 |
| Kentucky | 12 | 1 | 2 | 9 | 10 | 89 | 79 |
| Louisiana | 16 | 13 | ..... | 3 | 5,141 | 91 | 137 |
| Michigan | 16 | 3 | 1 | 12 | 1,790 | 107 | 87 |
| Mississippi | 1 | ..... | ..... | 1 | ..... | 1 | 2 |
| Montana | 4 | 3 | ..... | 1 | 114 | 11 | 5 |
| Nebraska | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New Mexico | 11 | 8 | 2 | 1 | 5,603 | 72 | 54 |
| New York | *11 | 8 | 2 | 1 | 43 | *58 | 70 |
| Ohio | 17 | 2 | 11 | 4 | 35 | 96 | 116 |
| Oklahoma | 31 | 16 | 3 | 12 | 3,037 | 202 | 253 |
| Pennsylvania | *22 | 16 | 5 | 1 | 20 | *141 | 216 |
| Texas | 229 | 159 | 4 | 66 | 158,439 | 1,080 | 1,389 |
| Utah | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| West Virginia | 9 | 1 | 7 | 1 | 2 | 60 | 108 |
| Wyoming | 1 | 1 | ..... | ..... | 150 | 27 | 8 |
| Total this week | 513 | 330 | 39 | 144 | 229,175 | 2,667 | 3,014 |
| Total last week | 533 | 364 | 54 | 115 | ..... | ..... | ..... |
| Total this year | 2,667 | 1,804 | 213 | 650 | ..... | ..... | ..... |

* Includes water-intake and pressure wells.

# Oklahoma Fields

***Activity relationship to results is inconsistent.***

***Majority of new locations is staked in old fields.***

**Tulsa.**—Activity in Oklahoma oil fields bears an inconsistent relationship to results. The completion total last week ran to 33 and only 16 of these were oil wells. The 16 producing wells had total initial output of only 3037 barrels. There were a dozen dry holes in the list.

Despite the low initial output and the high percentage of dry holes, the week brought 38 locations into the drilling list, most of them in older fields, where initial output will be relatively low.

A favorable economic background is responsible for the situation. There is ready market for oil, especially in the Greater Seminole area, where most completions are made. Natural decline of old wells is sufficient to keep ahead of oil brought to the market by the low initial yield of producers. For several months the output of Oklahoma has been well below the estimate of demand as calculated by the United States Bureau of Mines.

Although no locations have been made, moves last week indicated that further testing is likely for two areas in Oklahoma. Petition for a spacing order for the area around a producing well in Hughes County was filed with the Oklahoma Corporation Commission. In Caddo County an acreage transaction was completed south of a well, which has been shut down for several months.

Application for a 40-acre spacing order for 2440 acres of leases around the Hughes County wildcat of Phillips Petroleum Company offers promise of further testing for an area that has been in questionable classification for months. Phillips has been pumping more than 200 barrels of oil, along with water three times that much from Beeker 1, NW SW 8-5n-10e. Recently the wildcat was officially completed for 272 barrels potential from the Viola lime.

The test was drilled to 6283 feet in Arbuckle lime, which was dry. It was plugged back to 5639 feet. Top of the Viola lime was at 5618 feet. It has been on pumping tests over a long period.

Possibility of Cromwell sand production exists in the area, as the Beeker wildcat showed as much as 25,000,000 cubic feet of gas from that formation.

A hearing on the spacing petition will be held by the Oklahoma Corporation Commission February 7.

### Another for Coyle

Another test for Coyle pool, Payne County, was started last week when Magnolia Petroleum Company staked location for Cain 1, C S½ NW SW 12-17n-1e. The field, a 1938 discovery, has three producing wells. A north offset to the discovery well was dry. The field is being drilled on 20-acre spacing.

A third test for Tyrola field, southern Seminole County, was assured last week when Mid-Continent Petroleum Corporation and Stanolind Oil & Gas Company communitized acreage previous to making location for Wilson 1, NW SW NE 4-5n-6e.

Possibility of further development in southern Caddo County was indicated by assignment of leases to The Texas Company in Township 5 north, Ranges 11 and 12 west. The acreage was assembled by Quinton Little. The tracts are south of a wildcat shut down at 2556 feet in Viola lime. The Texas Company drilled this well, Smith 1, NE NW 2-5n-12w, and shut down; tools were moved out. It had both gas and oil shows from 2437 to 2455 feet. Casing was set at 2544 feet and cemented with 450 sacks.

### Grayson Defined on North

In the Grayson area, Seminole County, the north limit of production in dolomite or Wilcox sand was determined last week when Sunray Oil Company's Fleet 1, NE SW SW 12-6n-5e, was dry in these formations. It has been plugged back to 2842 feet to test Earlsboro sand.

East of the producing wells in the Grayson extension, Atlantic Refining Company has set pipe to test Atkinson 1, NW NW SW 17-6n-6e. This test had showings on the dolomite lime while drilling and coring. It was carried to 4023 feet in sandy dolomite. Casing was landed at 3778 feet.

At the week-end five wells were testing in the St. Louis field, Pottawatomie County, most active drilling spot in Oklahoma. One well was abandoned there last week: Rogers & Rogers' Swan 1, SW SW NE 36-7n-5e, found Wilcox dry between 4328 and 4340 feet. Three more wells were started in St. Louis last week. Three were also started in Dora pool, Seminole County.

Ramsey pool, Payne County, Mid-Continent Petroleum Corporation has three wells nearing completion depth within the community block. Completion of the three will give the field 20 producers. Outside of the block Stanolind Oil & Gas Company cored 5 feet of saturated core in Wilcox sand between 4817-23 feet in Walters 1, SW SE 18-18n-2e.

### Outpost Sets Casing

South of the Hillsdale discovery well, Garfield County, Champlin Refining Company has set casing in Allen 1, SEc 26-24n-8w, in the Viola lime at 6375 feet. Top of the formation was at 6239 feet. The two offset wells to the single producer in the field are not completed. Champlin Refining Company ran tubing to 6640 feet in Mackey 1, NW SE 4-24n-8w, and had recoveries in excess of 100 barrels by gas lift. So far the well has failed to flow. This company will deepen Boehm 2, NW SE NW 4-24n-8w, north offset to the producing well to below 6687 feet in Second Wilcox sand.

Thin sections lime are the encouraging features of the Carter County wildcat of Pure Oil Company, Noble 1, C NE SE 35-3s-1e, drilling below 4700 feet in Sylvan shale. This test is south of the Arbuckle mountains, where outcrops of the beds are checking thicker than the sections found in drilling.

Drilling should be resumed this month in the Washita County wildcat of Western Oklahoma where Continental Oil Company is underreaming to set 9-inch casing in Proctor 1, C NW 28-10n-20w. The hole is being underreamed below 9000 feet, total depth 10,195 feet. A heavier derrick has been installed and this, plus the size of the casing to be set, indicate a deep test.

## OKLAHOMA Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Beckham—** | | |
| Wagoner-Stogner's McGee 2, nw nec se 25-8n-22w | ¶6 | 990 |
| **Caddo—** | | |
| Phillips Petroleum Co.'s Garrison 1, ne se ne 34-6n-10w | 44 | 3400 |
| **Carter—** | | |
| Magnolia Petroleum Co.'s Heffner-Mills 1A, c sw ne 27-2s-3w | 249 | 7996 |
| Kyle et al's Daugherty 2, sw ne sw 17-4s-2w | 50 | 3154 |
| **Comanche—** | | |
| Dinsmore & Stripes' Myers 1, se swc 31-2n-10w | * | 1112 |
| **Creek—** | | |
| Dixie Oil & Gas Co.'s Lumm 1, swc ne 8-14n-8e | * | 1130 |
| Anderson et al's Conard 1, cne sw 32-14n-8e | * | 2532 |
| Burke-Greis' McMechan 1, sw nw nw 7-18n-9e | * | 3235 |
| McAdams & Thornton's Fast 1, sec ne 36-17n-9e | 600 | 2712 |
| Strozier's McDougal 3, se sec nw 12-16n-11e (pb 1124 ft) | ¶0.3 | 2393 |
| **Jefferson—** | | |
| Bridwell Oil Co.'s Seay Tract 1, sw se ne sw 29-6s-5w | 15 | 1519 |
| McNess' Sophia Bohammon 1, sw nw se 33-6s-5w | * | 1530 |
| **Lincoln—** | | |
| Cooper Drilling Co.'s School Land 1, sec ne 16-14n-6e | 225 | 3066 |
| **Logan—** | | |
| Helmerich & Payne's Strain 1, nwc se 27-16n-1e (pb 4950 ft) | * | 6920 |
| **Okfuskee—** | | |
| Eldridge's White 1, c ne ne 31-11n-11e | Lcn. | Abn. |
| Staples' Robinson 2, sw sw se se 21-12n-11e | * | 2275 |
| **Oklahoma—** | | |
| I. T. I. O. Co.'s Button 1, se sw sw 19-11n-2w (pb 3110 ft) | ¶1.2 | 4549 |
| Duncal Oil Co.'s Themier 1, 100 ft east csl nw se se 2-11n-3w | 20 | 4506 |
| **Okmulgee—** | | |
| Lambert's Barber 1A, csl ne ne nw 29-15n-14e | * | 2289 |
| **Pawnee—** | | |
| Coronado Oil Co.'s School Land 20, sw nw sw 16-21n-8e | 8 | 2228 |
| **Payne—** | | |
| Amerada & Stanolind O&G Co.'s Fruin 1, c w½ sw nw 12-17n-1e | 522 | 4922 |
| Gulf Oil Corp.'s George 3, sw nw nw 4-19n-5e | 70 | 3230 |
| **Pontotoc—** | | |
| Konawa Development Co.'s Masters 1, swc 14-2n-7e | 100 | 1404 |
| Deep Rock Oil Co.'s Bates 1A, swc nw 36-5n-7e | 34 | 2500 |
| **Pottawatomie—** | | |
| Sinclair Prairie Oil Co.'s Laster 8, swc ne 19-6n-4e | 2 | 3705 |
| Mid-Continent Petroleum Corp.'s Vieux 1, swc se 31-7n-5e | 26 | 4170 |
| Trigg's Rhodd "A" 1, sec 32-7n-5e | 110 | 4211 |
| Cooper Drilling Co.'s Bewley 1, sw se nw 36-7n-4e (otd 4232 ft) | 962 | 4232 |
| **Seminole—** | | |
| Gulf Oil Corp.'s Grayson 4, sw nw sw nw 13-6n-5e (pb 2690 ft) | * | 2702 |
| McBride's Gaines 1-B, sw ne sw sw 20-6n-7e | * | 1872 |
| Deep Rock Oil Co.'s McCann 2, nec 33-7n-6e | * | 2287 |
| Smith's Baker 1, nwc se 29-10n-6e | Lcn. | Abn. |
| **Tillman—** | | |
| Mitchell et al's Myer 1, ne ne nw sw 24-1n-17w | * | 608 |

*Failures; †Junked; ¶Million cu. ft. gas.

# Kansas Field Developments

***Prolific well assures extension for Buhler pool. Extensions also recorded for Leesburgh and Letsch.***

**Wichita.**—Extension of the Buhler pool, Reno County, was assured late last week by completion for 625 barrels potential of Hagerty 1, NE NW 36-22-5w, from Wilcox sand, total depth 3932 feet. The well is a half mile south of the two wells in the field proper.

Other extensions, which were encouraging last week, were recorded for the Leesburgh pool, Stafford County, and the Letsch pool, Russell County. There was further encouragement for extension of the Morel pool, Graham County, when oil rose 800 feet in the hole.

A dry hole a half mile north of production in the Zenith pool, Stafford County, gave the first clue to production limits of the field in this direction.

Two wildcats, both in Barton County, failed to get production in the Arbuckle lime. They are plugging back to try for production in the upper Lansing-Kansas City lime.

Other than high average potential rating for its successful wells, the whole week in Kansas was at low ebb on field activity. The 21 oil wells put on production scored combined initial output of 24,962 barrels. Four dry holes and one abandoned location made up the remainder of the completion total. Meanwhile only 17 wells were started in Kansas.

## KANSAS

### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Barton—** | | |
| Sinclair Prairie Oil Co. et al's Seyfert 1, sw nec 29-16s-11w | 2110 | 3361 |
| Cities Service Oil Co.'s Bauman 1, c sl sw nw sw 6-16s-13w (pb 3211 ft) | * | 3413 |
| Skelly Oil Co.'s Gage 1, sec sw 35 16s-13w (pb 3260 ft) | 451 | 3382 |
| Stanolind Oil & Gas Co.'s Panning 14, ne sw se 10-20s-11w | 2244 | 3283 |
| **Butler—** | | |
| Rex-Morris et al's Johnson 2, sec 20-26s-7e | 30 | 2195 |
| Landon et al's Shriver 1, ne nw ne 28-27s-6e | 30 | 3085 |
| Horn et al's Creed 1, nw se sw 17-29s-4e | Abn. | Spd. |
| **Cowley—** | | |
| Campbell Drilling Co. et al's Central Life 1, swc nw 28-30s-3e | * | 3045 |
| Trees Oil Co.'s Lewis 5, se nw ne 28-31s-4e | 1906 | 3358 |
| McKnob's Byers Land Co. 2, ne se nw 21-32s-5e | 568 | 3064 |
| **Greenwood—** | | |
| Hart's Sharpe 6, sw ne nw 5-24s-13e | 10 | 1631 |
| Turner et al's Black 1, se ne nw 3-27s-13e | * | 1895 |
| **McPherson—** | | |
| Continental Oil Co. et al's Graber 8, csl sw ne nw 32-21s-1w | 437 | 3396 |
| **Rice—** | | |
| Derby Oil Co.'s Lewis 5, swc 7-18s-7w | 2165 | 3214 |
| Hollow's Hohl Estate 1, cwl swc 3-18s-10w | * | 3326 |
| Sinclair Prairie Oil Co.'s Thompson 7, se ne nw 21-20s-10w (pb 3140 ft) | 930 | 3344 |
| **Russell—** | | |
| Central Petroleum Corp.'s Mills 1, swc 34-13s-15w | 362 | 3319 |
| The Texas Co.'s Boxberger 1, sec 22-14s-14w | 1521 | 3003 |
| Cities Service Oil Co.'s Hennessey 1, swc se 26-15s-14w | 2033 | 3354 |
| **Stafford—** | | |
| Crosbie's Johnson 8, nec sw 13-24s-11w | 1730 | 3796 |
| E. H. Moore's Cleo Johnson 6, se sw se 13-24s-11w | 187 | 3806 |
| J. K. Johnson 3, nw sw ne 13-24s-11w | 2756 | 3793 |
| Stanolind Oil & Gas Co.'s Opal Hartnett 3, sw se nw 13-24s-11w | 1272 | 3786 |
| Opal Hartnett 4, sec nw 13-24s-11w | 1262 | 3789 |
| Pure Oil Co.'s Krey 13, nw ne se 14-24s-11w | 1672 | 3805 |
| Sinclair Prairie Oil Co.'s Krey 8, sw se ne 14-24s-11w | 1286 | 3804 |

*Failures; †Junked; ‡Million cu. ft. gas.

### Morel Extension Likely

Extension of the Morel pool, Graham County, continued encouraging when oil rose 800 feet in 7 hours after drilling to 3702 feet in the Arbuckle lime in Drumm 1, SE SE NE 16-9-21w. Top of this formation was found at 3684 feet. The hole was carried to 3699 feet with rotary tools and drilled the next three feet with cable tools. Further testing may include acid treatment.

Continental Oil Company also extended the Leesburgh pool, Stafford County, a fourth of a mile to the northwest by completion of McCune 1, SW SW NE 12-25-13w, which established a potential of 2022 barrels from Arbuckle lime, total depth 4091 feet. It is the second well in the pool.

Another extension for Continental Oil Company was in the Letsch pool, Russell County. Its Lipprand 1, C NE NE NW 35-13-14w, a quarter of a mile southwest of other production, was completed in the Lansing-Kansas City lime for 1915 barrels, total depth 2969 feet.

The extension well in process of completion is a half mile southeast of the Buhler pool, Reno County. It is Hagerty 1, NE NW 36-22-5w, where Westgate Greenland Oil Company had 3500 feet of oil in the hole from Simpson formation, total depth 3932 feet. It had top of the sand at 3928 feet.

### Only Two Wells in Pool

Buhler pool has only two wells; being a 1938 discovery. Its production is from the Simpson, generally classed as Wilcox sand production. The extension well is to be given pumping test.

A half mile southeast of Sittner pool, Stafford County, Stanolind Oil & Gas Company, had only a small show from the Arbuckle lime in Seifkes 1, SW SE 34-21-12w, total depth 3632 feet. The formation was treated with 2000 gallons of acid and the well swabbed at the rate of 8 barrels an hour before running tubing for a pumping test.

The north limit of Zenith, Stafford County, was indicated last week by a dry hole a half mile north of production when J. E. Crosbie, Incorporated, went to 3718 feet, Viola lime, in McMickle 1, C SE SE 2-24-11w. The test missed Misener sand, source of production in the pool. Two weeks ago the pool had a dry hole a half mile east of production. So far drilling has not indicated limits to the south and west.

Midway between the Hoisington and Alberts pools Long & Johnson continue to drill deeper and test the Arbuckle lime at Eveleigh 1, SWc, NE 3-18-14w. On its last test it pumped only 19 barrels of oil in 7 hours from 3371 feet. Top of the lime was at 3338 feet and 5-inch casing was set at 3335 feet.

### Two Wildcats Fail

Two wildcats failed to get production in the Arbuckle lime and will be plugged back to test in the Lansing-Kansas City lime section. Six miles south of the Alberts pool, which produces both oil and gas from Regan sand, Amerada Petroleum Corporation got water in the Arbuckle on a test drilled to 3622 feet. Previously the well had small showings from cores. Top of the formation was 3572 feet. First oil show was at 3580 feet. A core between 3580 and 3585 feet recovered 2 feet of saturated lime. Casing was landed at 3575 feet and the hole drilled to 3622 feet with cable tools. Water rose 2200 feet. It is being plugged back first for a test in the Arbuckle around 3595 feet.

Southwest of Davidson pool, Barton County, Sinclair Prairie Oil Company had water from Arbuckle lime in Pichner 1-A, NE SE SE 10-16-11w. Top of the Arbuckle was at 3344 feet, where casing was set. The plug was drilled to 3371 feet and the formation showed sulphur water. First plug back was to 3130 feet, and a test made in the Lansing-Kansas City lime by perforations between 3109 and 3118 feet showed salt water. Other parts of the upper lime will be tested.

## *Sinclair will resume operations on Kansas lines*

Sinclair Refining Company, pipe line department, will resume operation of its gathering system in Montgomery County, Kansas. The lines were sold to Producers, Incorporated, an organization of Montgomery County producers, which made plans for delivering their own oil to the trunk line system of the company. Return of the system was by mutual consent.

## *Texas commission calls unexpected statewide hearing*

A statewide proration hearing has been scheduled by The Texas Railroad Commission for February 20, at Austin.

When Commission Chairman Lon Smith announced that the hearing would be held, he said that it was not a statewide hearing in the usual sense, but that it would deal with the adjustment of allowables between wells and fields.

Plans are being made to include the monthly gas hearing, which is required by law.

Why the oil hearing was called could not be ascertained, as commissioners said no complaints of discrimination had been received that called for a hearing so general. However, Commissioner Smith declared that such inequities exist, indicating that they have arisen from assignment of special allowables to some fields.

The result is that any operator must be prepared to defend the allowables he has, or if he is dissatisfied he must be able to prove need for revision on the basis of waste or market demand.

# Illinois Developments

***Wayne County wildcat cores 18 feet of McClosky. Lake Centralia-Salem records record 3204-barrel flow.***

**Olney, Ill.**—Carl Robinson's D. K. Felix 1, SW SE SE 27-2s-8e, Barnhill Township, Wayne County, 4 miles southeast of Fairfield, cored an 18-foot McClosky saturation which the operator said would make a good well. Casing was set to pay, and the wildcat was to be drilled in late in the week. It is 7 miles east of the prolific Big Mound Township field of Wayne County.

Three miles east of Felix 1, New Penn Development Company's J. L. Wagoner 1, NW SW NE 30-2s-9e, Leech Township, an indicated pool opener of a week ago, swabbed 240 barrels of water-free oil from 8 feet of McClosky pay. Pump was being installed. Bottom of the well, on an 18,000-acre lease, is at 3445 feet.

Field work in all sections of Illinois proceeded under most severe handicaps last week as a period of alternate thaws and freezes was followed by a heavy snow fall that covered most of the state. Road conditions, even on the well-traveled highways and county trunks, were so bad that a group of scouts stationed at Centralia who usually drive to Mattoon every week for a luncheon meeting took the train last week. Despite unfavorable weather, however, operations continued at a good pace, with new operations keeping up with completions.

Production records for the booming Lake Centralia-Salem pool of Marion County fell last week when Kingwood Oil Company's Shanafelt 11, SW NE NE 20-2n-2e, flowed 1335 barrels in 10 hours, or at the rate of 3204 barrels a day. It topped the McClosky at 1913 feet and had streaks of pay between 1918 and 2004 feet. Casing was perforated between 1922 and 2002 feet. No. 9 on this lease started at 2700 barrels and No. 10 at 3050 barrels, both from the McClosky lime.

In Wabash County, 4 miles west of the Cooper pool opener in Gibson County, Indiana, Longhorn Oil Company's Mrs. J. M. Helm 1, SE SE NW 15-3s-14w, Compton Township, 1½ miles northeast of Grayville, resumed drilling after a short shutdown to examine a 23-foot Cypress sand core that contained an oil saturation with salt water. The core was taken below 1807 feet, and officials reported the well is checking substantially with the log of the Cooper well, which was completed in the McClosky at about 2900 feet. Another saturation was passed through by Helm 1 between 2255 and 2260 feet, and at last report the wildcat was drilling at 2284 feet.

Three miles northeast of the Cooper well, and in Section 7, Wabash County, Illinois, because of a turn in the Wabash River, Yingling & Hays' Schultz 1 started drilling and at last report was at 1300 feet.

In the recently opened Niagaran lime pool at Sandoval, Marion County, J. W. Menhal Corporation's Illinois Central 1, west of Sandoval, was being closely watched as it drilled below 2300 feet. It is less than a mile west of the discovery, Southwestern Oil & Gas Company's Benoist 21, NW NW NE 8-2n-1e, which had an initial flow of 319 barrels of oil in 19 hours with bottom at 2926 feet. Completed late in December, the discovery is now pumping about 150 barrels a day.

Awaiting the outcome of Menhal Corporation's test was Max Pray's J. Langenfeld 1, NW SW NW 4-2n-1e, Sandoval Township, which had sulphur water in the hole after plugs were drilled to a 24-foot Niagaran lime saturation below 3051 feet. Outcome of Menhal Corporation's drilling well will affect development in the region, now at a standstill because of the failure to obtain Niagaran lime production at the Pray well. Pray will probably deepen to the Trenton lime or St. Peter sand, at about 4500 feet in that locality. Neither of the deeper formations have been tested in the Sandoval area.

Two miles northeast of the Dix pool of Jefferson County and 1 mile south of Kell, Chicago Syndicate's Williams 1, NW NE SE 36-1n-2e, Raccoon Township, Marion County, plugged back to the Rosiclare sand after water entered the hole when plugs were drilled to the McClosky. A ten-foot saturation had been found in the lower lime formation below 2438 feet.

In another new area, 1¼ miles southwest of G. H. Blankenship's J. L. Dennis 1, pool opener in Pilot Knob Township, Washington County, Blankenship & Pres Cochrane were starting Oak Grove Cemetery 1. Successful completion of this test would force offsets by Magnolia Petroleum Company and Shell Petroleum Corporation.

Another new start influenced by the Dennis discovery is Hutchins' Weihe 1, SW SE 35-2s-3w, Nashville Township, 2 miles south of Nashville and 3½ miles north of the Dennis strike. It was drilling below surface pipe with Taylor Brothers holding the contract.

A Cole County wildcat was abandoned last week, and indications were that a second would meet the same fate this week. Kingwood Oil Company's Tiven 1, C SW NE SE 30-13n-8e, Humboldt Township, stopped drilling at 3399 feet. Tests have been unsuccessful at R. F. Sheeles & Whisenant's Michael 1, SW SW NW 1-11n-7e, Paradise Township, south of Mattoon, which 3 weeks ago reported Weiler sand saturation at 1877 feet. Sole active operation is The Texas Company's W. H. Tracy 1, a wildcat in C W NW SE 22-13n-7e, North Okaw Township, awaiting orders after drilling to 3220 feet.

### All White County Tests Quit

Abandonment last week of Pyramid Petroleum Corporation's G. Wode 1, SE SE NE 4-7s-8e, Indian Creek Township, removed White County from drilling activity. The Wode wildcat, 3 miles southeast of Norric City, found the McClosky dry and stopped drilling at 3000 feet. That the county would not remain inactive long, however, was indicated when Edw. Robinson, Centralia operator, announced Cora Springer 1 would be started immediately as a McClosky test. Location is in the NE SW NW 18-4s-8e, in the approximate center of a 3000-acre block in the northwestern part of the county.

The Cypress sand field on the Nobel-Denver Township line of Richland County, opened several months ago by Pure Oil Company, had the first dry hole in that formation last week when the company's F. Wakefield 6, 26-4n-9e, failed to find worth-while saturation. It was drilling on at 2990 feet, nearing the McClosky level. No. 5 on this lease had casing set to Cypress sand, with bottom at 2613 feet, No. 7 was drilling at 2500 feet, and No. 8 was a location. Other operations in this pool, located 5 miles northwest of Olney, were: Dyson-Anderson's E. Wheeler 1, Section 24-4n-9e, surface pipe set and moving in rotary rig to complete; Pure Oil Company's H. Cazel A-3, Section 23-4n-9e, drilling at 500 feet, Carter Oil Company's H. Sparr 1,

## ILLINOIS

### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Bond County—** | | |
| DeMayo et al, S. J. Dresser 1 | 15 | 1835 |
| **Clark County—** | | |
| Tide Water Associated, Brimer 14 | * | 600 |
| **Clay County—** | | |
| Pure, William Travis 1 | 575 | 3100 |
| Tetrick 9A | 662 | 3080 |
| Routt Consolidated 1 | 678 | 3095 |
| J. T. McAllister 2A | 215 | 3095 |
| Kingwood Oil Co., Graham 2 | 85 | 2986 |
| **Clinton County—** | | |
| Santa Fe O&G Co., Maddox 5 | 35 | 1004 |
| G. N. Moore et al, Leicht 1 | * | 1529 |
| Pass et al, Erlingler 1 | * | 1370 |
| East Oakland Synd., Temple 1 | * | 1300 |
| **Cumberland County—** | | |
| Henshaw Bros., Rhea 1 | * | 2301 |
| **Fayette County—** | | |
| American Seismograph Co., Bates 1 | * | 1656 |
| Magnolia, T. C. Clow 15 | 192 | 1586 |
| T. C. Clow 16 | 267 | 1587 |
| T. C. Clow 17 | 378 | 1586 |
| Carter Oil Co., Irvin Hobbs 3 | 120 | 1518 |
| N. M. Hopper 3 | 85 | 1566 |
| Frank Quade 1 | 140 | 1593 |
| O. E. Goodson 1 | 384 | 1574 |
| O. Harper 2 | 64 | 1533 |
| W. B. Johnson Dr. Co., Dial 2 | 142 | 1544 |
| Sam Hunt, Owens 2 | 400 | 1531 |
| Sol Simon et al, Owens 1 | 350 | 1529 |
| Jarvis Bros., Homan 1C | 233 | 1582 |
| Homan 2C | 150 | 1582 |
| Homan 3C | 160 | 1585 |
| **Jasper County—** | | |
| Borah et al, M. M. Vanatta 1 | * | 2694 |
| **Jefferson County—** | | |
| Transwestern Oil Co., Casner 1 | * | 2272 |
| Luttrell & Holleman, Reynolds 1 | * | 2401 |
| Kingwood Oil Co., Wayer 1 | * | 2494 |
| **Lawrence County —** | | |
| Kitchen & Wilson, R. A. Ackman 1 | 15 | 1854 |
| Kesl et al, Gillespie 1 | ¶7.2 | 1110 |
| Hoeffken & Willis, Citizens Trust 1A | ¶3.5 | 1127 |
| **Marion County—** | | |
| Rockhill Oil Co., Foster 9 | 250 | 1902 |
| Texas Co., V. L. Foster 5 | 1150 | 2004 |
| V. L. Foster 6 | 210 | 2010 |
| B. Hawkins 1 | 341 | 1787 |
| B. Hawkins 2 | 225 | 1805 |
| B. Hawkins Community 1 | 50 | 1830 |
| N. Young 5 | 300 | 1794 |
| A. Sweney 1 | 105 | 1826 |
| W. Ray 2 | 30 | 1868 |
| W. Ray 3 | 20 | 1872 |
| D. Young 3 | 50 | 1865 |
| Bergher, S. I. Schilling 1 | * | 2205 |

Section 23-4n-9e, location, and Mammoth Producing & Refining Company's Heitz-Ridenour 1, Section 24-4n-9e, location. The latter test is 1½ miles southwest of the southern Wakefield wells and, if successful, would extend the pool that far in that direction.

Only one operation is listed in the North Olney pool, Chas. Skinner et al's Sylvan Iris School 1, Section 23-4n-10e, drilling at 2300 feet with cable tools.

In Clay County, Gulf Refining Company's Palmer 1, NW NW SW 35-4n-7e, Hoosier Township, near Sailor Springs, passed through a dry McClosky and was shut down at 3140 feet. It may be drilled deeper. A later plugging operation may be made to test a Cypress saturation passed through on the way to the McClosky.

In Randolph County, Dr. G. R. Sewards et al's H. Rehemer 1, SE NE 19-4s-7w, was started with cable tools. A test of the Trenton lime, it was drilling at 250 feet at last report. Location is 1½ miles north of a gas well drilled 5 years ago to 320 feet and which still has substantial bottom-hole pressure. Acreage on the west is held by Shell Petroleum Corporation, on the north by Gulf Refining Company and on the east by Superior Oil Company.

Cramped by pipe line proration, a group of independent operators last week purchased 16 8000-barrel storage tanks for erection in the Lake Centralia-Salem field.

| Company, Well and Location | Bbls. Init. Prod. | Depth |
|---|---|---|
| Haynes & Thomas, Wallis 1 | 112 | 2086 |
| Kingwood & Bell, Shanafelt 1B | * | 2256 |
| Magnolia, W. O. Chitwood 5 | 150 | 1903 |
| W. O. Chitwood 9 | 192 | 1851 |
| W. O. Chitwood 10 | 144 | 1844 |
| W. O. Chitwood 11 | 190 | 1862 |
| W. O. Chitwood 13 | 185 | 1888 |
| W. O. Chitwood 14 | 175 | 1875 |
| W. O. Chitwood 15 | 192 | 1856 |
| D. A. Shanafelt 11 | 120 | 1851 |
| D. A. Shanafelt 12 | 144 | 1854 |
| J. H. Young 17 | 520 | 1844 |
| Harry Blackstock, M&I RR 1 | 195 | 1809 |
| M&I RR 2 | 195 | 1790 |
| Ohio Oil Co., Young Hrs. 4 | 90 | 1835 |
| Young Hrs. 6 | 98 | 1781 |
| Young Hrs. 7 | 55 | 1790 |
| Young Hrs. 8 | 75 | 1787 |
| Shell, Salem State Bank 9 | 716 | 1792 |
| Young Hrs. 3 | 762 | 1780 |
| Young Hrs. 5 | 908 | 1784 |
| Roberts & Murphy, Dempsey 3 | 240 | 1778 |
| Dempsey 4 | 400 | 1780 |
| Wiser Oil Co., H. Weems 4 | 375 | 1898 |
| Weems 5 | 425 | 1926 |
| Weems 6 | 1000 | 1002 |
| Bob Garland, Voght 1 | * | 2351 |
| **Perry County—** | | |
| Bert Fields & Rockhill Oil Co., Provart Est. 1 | * | 2636 |
| **Piatt County—** | | |
| Max Pray et al, Baker 1 | * | 3021 |
| **Randolph County—** | | |
| Dr. Seward et al, Shoenbeck 1 | * | 508 |
| **Richland County—** | | |
| Texas Co., W. Elliott 1 | 99 | 3013 |
| C. Scherer 1 | 317 | 3026 |
| **St. Clair County—** | | |
| Group Oil Co., Reuss 1 | * | 895 |
| **Schuyler County—** | | |
| Harry Schwartz, Chas. Thompson 1 | * | 1100 |
| **Shelby County—** | | |
| Jackson & Fisher, Von Behren 1 | * | 2175 |
| Prunty Producing Co., Hickey 1 | * | 2012 |
| **Wabash County—** | | |
| Hoffman et al, Smith 1 | * | 1595 |
| **Washington County—** | | |
| J. B. Oberholtzer, Frein 1 | * | 1373 |
| **Wayne County—** | | |
| Pure, C. H. Billington 3 | 300 | 3130 |
| Glenn Zimmerman 2 | 239 | 3073 |
| Roche & Voyles, Hutchins 1 | * | 3336 |
| A. P. Muhlbach, Anderson 1 | 48 | 3092 |
| Roche & Boyles, McPherson 1 | 401 | 3269 |
| H. H. Weinert, Morlan 4C | 40 | 3325 |
| Texas Co., R. Lyons 4 | 100 | 3353 |
| F. R. Stoker, Blackburn 1 | * | 3359 |
| **White County—** | | |
| Sun Oil Co., Robert Brown 1 | * | 3919 |

*Failures; †Junked; ¶Million cu. ft. gas.

# Kentucky Fields

***Wildcat near Ohio River bank has seven feet of McClosky. Spottsville north extension still in completion stage.***

**Owensboro, Ky.**—W. H. Parks et al's O. G. Letcher 1, wildcat in the Scuffletown section of Henderson County, on the fork of the Ohio and Green rivers, encountered 7 feet of McClosky of sufficient saturation and porosity to make a good well. The formation was described as being so crumbly with oil that it was impossible to take a core. The lime was topped at 2105 feet, casing was set and preparations made to drill in.

Palmer Drilling Company will start a second well 600 feet due east with rotary tools. Twenty-three wells are tentatively planned for the 518-acre lease. Leases in the vicinity of the wildcat, 10 miles from production, were selling for between $10 and $25 an acre last week. A good well in Letcher 1 would also extend drilling activity across the Ohio River to Indiana.

Outcome of Maurice T. Grugg and Harry Fotiades' T. Cooksey 1, which a week ago promised a 1½ mile north extension to the new Spottsville pool of Henderson County when it cored a 12-foot McClosky saturation, was as yet unknown. Failure to move in a spudding machine immediately delayed completion of the test. Also closely watched in this section was Ralston & Sales' Annie Stewart Ferry 1, drilling toward the McClosky. An outpost to the Spottsville proven area, its successful completion will touch off a drilling boom within the limits of Spottsville.

Acid treatment of Fred Phillips' Shearn Coal Company 1, SEc SW of Lot 7 on the Shearn block, northeast of Belton, eastern Muhlenberg County, pumped at the rate of 300 barrels an hour. Completion of the test a week ago with an initial pumping production of 150 barrels a day from the McClosky lime opened a new pool.

A steadily rising Green River which was expected to overflow its banks by the end of the week is indicative of conditions faced by western Kentucky operators. Warm weather and heavy rains made movement of equipment difficult throughout the region. What snow fell early in the week melted because of the warm ground.

Sun Oil Company and Kentucky Natural Gas Company's G. Trigg (Bukins) 2, wildcat in the Corydon section of Henderson County, was drilling at 1200 feet with rotary after spudding a week ago. It is 1 mile east of Trigg 1, which was abandoned last fall when salt water entered the hole. H. & H. Drilling Company is the contractor.

In Webster County, near Sebree, Iley Browning will drill J. Sutton 1, 600 feet east of his J. R. Ramsey 1. The latter test, abandoned last fall, was recently re-opened to produce at the rate of 100 barrels a day from the McClosky at 1396 feet. Browning is laying a pipe line from the Ramsey well to Sebree.

Operations were being resumed at A. A. Douglass et al's J. Rankin 1, in the Horse Shoe Bend area of Henderson County, which found the McClosky dry at 2471 feet. A test of upper sands will be made.

Cooper, Acos & Cooper were moving in cable equipment for Lacke 1, north of Baskett and northwest of Henderson.

After finding the McClosky dry, J. C. Ellis' K. A. Jones 2, in the Birk City area, plugged back and perforated casing opposite the Bethel and Cunningham sands at 1700 and 1780 feet, respectively. Oil was standing 100 feet in the hole, believed to be coming

## PENNSYLVANIA Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Indiana County—** | | |
| Equitable Gas Co., Rarigh 3242 | ¶.04 | 3687 |
| **Potter County—** | | |
| New York State Natural Gas Co., Traux 1 | ¶1.20 | 4787 |
| **Washington County—** | | |
| Cannonsburg Iron & Steel Co., Fee 1 | ¶.07 | 2570 |
| **Bradford District** | | |
| Cole Creek Oil Co., H. B. Vincent heirs | 1 | .... |
| T. H. Kervin, Jr., No. 2 Berry | 1 | .... |
| F. J. Eisert, Loop Estate | 2 | .... |
| Ryder Scott Co., Fee | 4 | .... |
| Forest Oil Corp. | 1 | .... |
| Niagara Oil Corp. | 2 | .... |
| Bradford Transit Co., 6 wells | 6 | .... |
| **Bradford: Water Intake Well** | | |
| Forest Oil Corp. | ... | .... |
| **Butler-Armstrong District** | | |
| Heck & Co., T. Peffer | 1¼ | .... |
| **Middle District** | | |
| Weaver Trust Estate, F. A. Neiderlter | ¶ | .... |
| National Petroleum Co., Stanton | 1 | .... |
| **Middle District (Pressure Well)** | | |
| Wasson & Fleming Oil Co., Lot 3192 | ... | .... |
| **New York-Pennsylvania: Gas Field** | | |
| G. L. Cabot, Inc., E. Elliott | * | .... |
| Empire-Rogers | ¶ | .... |

*Failures; †Junked; ¶Million cu. ft. gas.

## KENTUCKY Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Butler County—** | | |
| Ashby et al, Ray 1 | 10 | 875 |
| **Daviess County—** | | |
| W. E. Hupp et al, Baird 1 | * | 1681 |
| Barett et al, Jones Heirs 1 | * | 300 |
| Combs & Jenkins, Robinson 1 | * | 1933 |
| Ashby & Ellis, Iglehart 1 | * | 1601 |
| Lincoln Oil Co., Iglehart 2 | * | 2006 |
| **Henderson County—** | | |
| W. E. Hupp et al, Boswell 4 | ¶2.50 | 1229 |
| Miller, O. W. Rash Heirs 2 | * | 1954 |
| **Martin County—** | | |
| Kentucky-West Virginia Gas Co., Sellards 574 | ¶.23 | 2753 |
| **Muhlenberg County—** | | |
| Darby et al, Smith 1 | * | 1001 |
| **Ohio County—** | | |
| Porter et al, Fendley 3 | * | 910 |
| Neal et al, Roberts 2 | * | 927 |

*Failures; †Junked; ¶Million cu. ft. gas.

from both formations. If commercially completed, it would be the first Henderson County test producing from two formations. It had been drilled to 1947 feet before plugging back.

In the same area, Major Oil Company's C. Long 2 had a Jett sand saturation at 1240 feet where it set an aluminum section in the well casing. Drilling was resumed toward the Jones sand at about 1400 feet, where another aliuminum section will be used, and the well deepened to the McClosky. Operators plan to cut away the aluminum sections opposite the Jett and Jones sands and gain production from the three formations, pumping from the bottom. The procedure is new in this district.

---

Purchase of the Valvoline Oil Company's refinery at Warren, Pennsylvania, was announced last week by Rupert & Wayland, representing the purchasers whose identity was not disclosed. The plant, a complete refinery with a capacity of 1000 barrels of crude oil per day, will be dismantled, with work to start within 30 days. It has been idle for four years.

## OHIO

### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Athens County—** | | |
| Clark et al, Redford 3 | ¶.13 | 1325 |
| Bowman Oil & Gas Co., Rogaski 2 | ¶.12 | 1697 |
| Hocking Valley Drilling Co., Hocking & Athens Coal Co. 13 | * | 1210 |
| **Coshocton County—** | | |
| Rutledge et al, Carle 1 | 30 | 3120 |
| **Hocking County—** | | |
| Atlas Drilling Co., Wylie 1 | * | 1930 |
| **Holmes County—** | | |
| Ohio Fuel Gas Co., Wiseman 1 | ¶1.90 | 2964 |
| **Knox County—** | | |
| Ohio Fuel Gas Co., McMillen 1 | ¶.95 | 2977 |
| **Licking County—** | | |
| Settles et al, Livingston 1 | 5 | 819 |
| **Monroe County —** | | |
| Erley et al, Cline 1 | * | 1575 |
| Walker Co., Beall 1 | ¶.30 | 2305 |
| **Morgan County—** | | |
| Penn Contracting Co., Hilaman 2 | * | 1035 |
| Pierce Co., Banks 1 | ¶ | 1226 |
| Ornodorff, Dale 3 | ¶ | 1377 |
| **Stark County—** | | |
| Shadrack et al, Essig 1 | ¶.34 | 4509 |
| Obermiller Bros., Myers 1 | ¶.36 | 4509 |
| White Co., Whitmire 1 | ¶ | 4657 |
| **Washington County—** | | |
| Briggs et al, Mindling 1 | ¶.26 | 941 |

*Failures; †Junked; ¶Million cu. ft. gas.

## NEW YORK

### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Steuben County—** | | |
| Clancey et al, School District No. 5 1 | ¶1.50 | 3713 |
| **Allegany County—** | | |
| Belmont Quadrangle Drilling Co., Livermore farm, Independence Twp. | ¶ | 4800 |
| R. B. Moore et al, Curtiss farm, Bolivar | 8 | 1324 |
| Bradley Prod. Corp., Star farm, Bolivar | 9 | 1423 |
| Messer Oil Corp., Wilson-Reynolds farm, Bolivar | 8 | 1329 |
| Chestnut Oil Co., Shaner-Wakeman farm, Bolivar | 4 | 1272 |
| Budd Oil Co., Anderson-Otis farm, Alma | 8 | 1355 |
| Marsh Oil Co., Withey farm, Bolivar | 6 | 1368 |
| **Allegany: Water Intake Wells** | | |
| Gray Oil Co., Smith & Gray farm, Genesee | ... | 1362 |
| Richardson Petroleum Corp., Towner farm, Scio | ... | 1264 |
| **Steuben County—** | | |
| G. L. Cabot, Inc., Elmer Downey farm, West Union Twp. | * | 5327 |

*Failures; †Junked; ¶Million cu. ft. gas.

# Indiana

## *Spencer County wildcat overcomes fishing difficulty*

**Evansville, Ind.**—Frank Damron et al's Audrey W. Haines 1, NW NE SE 34-7n-6w, Ohio Township, Spencer County, 1½ miles south of Rockport, resumed last week after being held up by a fishing operation since October. The lost tools were cemented in the hole and a whipstock set on top of the plug at 1430 feet.

New wildcat start of the past week was Chas. C. Taliaferro's Jos. F. & Maggie Hopf 1, SE NW NE 12-2s-5w, Bainbridge Township, Dubois County, which spudded in and set 12-inch surface pipe at 140 feet. The test is 2 miles south of Jasper.

In this same county, Fred Phillips will drill Eli Hammer 1, SW SE NW 18-3s-5w, Cass Township.

In the vicinity of Cooper pool opener near Griffin, Gibson County, Ray Ryan and J. L. Smith's W. Dunn 1, NE SE SE 18-3s-13w, 1¼ miles east of the discovery, was drilling at 1120 feet, while Earl Hollandsworth and Joseph Bander's Cooper Estate 1, 240 feet south of the discovery, was drilling at 400 feet.

C. D. Neff's O. Deeg 1, 2 miles south of Hatfield, Spencer County, stopped drilling temporarily at 1300 feet last week after passing through 2 feet of Jett oil saturation with 10 feet of hard sand below 1137 feet.

In Vanderburg County, J. B. Bond's Fred J. and Ida Keck 1, SW NE SW 6-7s-11w, which furnished a 1-mile east extension to Sun Oil Company's Heusler Dome pool of Posey County, pumped 40 barrels on a 16-hour test last week. The outpost, completed in the Waltersburg sand, had water trouble which was successfully overcome.

In Warrick County, Imperial Oil & Gas Products Company erected a rotary rig over Mabeth Mining Company 1, SE NW NW 12-6s-8w, Boon Township, to continue the hole below its present depth of about 900 feet.

## *West Virginia report shows drilling decline*

**Charleston, W. Va.**—West Virginia drilling activity, as reflected by permits issued by N. P. Rhinehart, chief of the state department of mines, continued a seasonal decline in December when 35 permits were granted. The month's total was 33 percent lower than the 52 issued in the previous month, and 36 percent down from the 55 issued in the corresponding month a year ago.

The year's total of 631 permits was 39 percent lower than the 1035 issued in 1937, and 24 percent lower than the 832 issued in 1936. Thirty-three of the state's 55 counties were represented in the past year's permit list.

Following are the number of permits issued by counties, giving the December figure and the total for the year:

Barbour, none, 1; Boone, 1, 24; Braxton, none, 8; Brooke, none, 2; Cabell, 1, 44; Calhoun 2, 37; Clay, none, 14; Doddridge, none, 11; Fayette, none, 1; Gilmer, 2, 71; Hancock, none, 6; Harrison, 2, 13; Jackson, 2, 8; Kanawha, 6, 104; Lewis, none, 5; Lincoln, 2, 19; Logan, none, 5; Marion, 1, 3; Marshall, none, 13; Mason, none, 1; Mingo, 1, 3; Monongalia, none, 8; Nicholas, none, 3; Pleasants, none, 29; Putnam, none, 6; Ritchie, 4, 67; Roane, 1, 23; Tyler, none, 12; Upshur, none, 3; Wayne, none, 17; Wetzel, 6, 43; Wirt, 4, 19, and Wood, none, 8.

## *Eastern A.P.I. to be held on April 4 and 5*

Christy Payne, Jr., eastern district chairman, has announced the spring meeting of the district, American Petroleum Institute, division of production, will be held April 4 and 5 in the William Penn Hotel, Pittsburgh.

D. T. Ring, Ohio Fuel Gas Company, Columbus, Ohio, is chairman of the committee in charge of program arrangements. He will be assisted by O. W. Van Petten, Columbian Carbon Company, Charleston, West Virginia, and J. J. Schmidt, East Ohio Gas Company, Cleveland, Ohio.

John A. Thompson, Belmont Quadrangle Drilling Company, Bradford, Pennsylvania, will take charge of registration, while general arrangements are being handled by T. H. Myers, Carnegie Natural Gas Company, Pittsburgh, Pennsylvania.

## *Centralia plant to be auctioned*

Public sale of the plant of Power Oil & Refining Company of Centralia will be held at Centralia February 9 on order of United States District Judge Fred L. Wham issued last week in East St. Louis. The plant consists of a refinery and warehouse, and 34,400 feet of pipe line to productive wells.

The sale was ordered on the recommendation of V. E. Richardson, trustee, whom the court directed to prepare an inventory of assets. Claims of $176,565 were presented against the company, while assets were listed at $191,728 in a reorganization petition filed October 15, 1938.

---

**Shreveport.**—Shell Petroleum Corporation has renewed its contract with United Pipe Line Company and Union Producing Company, to purchase 5000 barrels of Rodessa crude daily for one year, with an option to take an additional 5000 barrels daily, if desired.

## WEST VIRGINIA

### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Braxton County—** | | |
| Pittsburgh & West Virginia Gas Co., Mollohan 7661 | * | 2753 |
| **Calhoun County—** | | |
| Foreman Oil & Gas Co., Conley 2 | ¶.20 | 1973 |
| **Kanawha County—** | | |
| United Carbon Co., Burdette 1 | ¶8.40 | 4952 |
| United Fuel & Gas Co., Carney et al 1 | ¶14.31 | 5027 |
| **Mingo County—** | | |
| Lusher, Stepp 2 | ¶.15 | 2052 |
| **Ritchie County—** | | |
| Pittsburgh Oil & Gas Co., Coyle Heirs 1 | ¶.50 | 1945 |
| Lemon, Norton 1 | ¶ | 1925 |
| **Wayne County—** | | |
| Sinclair Glass Co., Brown 1 | 2 | 2428 |
| **Wetzel County—** | | |
| Manufacturers Light & Heat Co., Montgomery 1 | ¶8.50 | 2198 |

*Failures; †Junked; ¶Million cu. ft. gas.

# West Texas Fields

***Drilling pick-up predicted for Ector County fields. Production may trend northwest from North Cowden.***

**Midland, Texas.** — Expanded drilling programs are in store for the North Cowden and Foster fields, Ector County, as result of recent extensions.

The former offers prospects of materially adding to its productive limits through tests now in process of completion. Continental Oil Company's Wight 1-8, near NWc SE T&P Section 9, Block 43, T-1-S, 1¼ miles west of production, was awaiting swabbing test at 4350 feet. A previous test at 4300 feet yielded 5 barrels of oil in 20 hours. This outpost is expected to make a producer after the usual nitro shot.

### Logs Thick Section

Broderick & Calvert's Holt 2, near SW NW NE T&P Section 20, minor northeast outpost, paved the way for more prospecting in this sector by responding to a nitro shot of 500 quarts at 4207-4389 feet, with a substantial potential flow indicated. The well was flowing by heads at close intervals while cleaning out 30 feet off bottom. The well log indicated a 300-foot broken pay section. The partnership has cemented surface pipe in the southeast unit of their 160-acre lease, and made location for a fourth test in the northeast unit. Texas Pacific Coal & Oil Company's Holt 1, SWc T&P Section 19, half mile east of production, was drilling at 3400 feet. It is credited with checking about 40 feet lower structurally than nearest production on the Yates sand marker.

Trend of production to the northwest and towards the Emma pool, Andrews County, is a possibility for the North Cowden field. Two small producers situated northeast of the projected trend give weight to the theory. Sinclair Prairie Oil Company's Fay Holt 1, SEc PSL Section 1, Block A, more than half mile west of the northwest border of the field proper, has started operations. Amerada Petroleum Corporation donated acreage towards the drilling of this outpost. Atlantic Refining Company and Standard Oil Company of Texas' University 1-B, C SE NW T&P Section 1, Block 44, T-1-N, Andrews County, situated between the Emma and North Cowden areas, tested gas cut mud when formation tester was used at 3980-4080 feet, and was drilling lime at 4100 feet.

### Extension Test Flows

The half mile east extension previously indicated for the Foster field by Harry Brown and York & Harper, Inc.'s Gist 1, NW NW SW T&P Section 9, Block 42, T-2-S, earned a potential rating of 1341 barrels, flowing through casing. The saturated zone at 4170-4277 feet was shot with 430 quarts of nitro.

The south portion of Goldsmith field, Ector County's most active drilling center for more than a year, was assured of a large producer when Phillips Petroleum Company and Pure Oil Company's Clyde Cowden 54 flowed 394 barrels oil in 3 hours through 3-inch casing outlet after using 5000 gallons of acid in pay at 4122-76 feet. Gulf Oil Corporation has 8 tests due for completion this week on the Goldsmith leasehold.

Magnolia Petroleum Company's W. P. Edwards 12, SWc PSL Section 12, Block B-23, Gulf-Waddell area, Crane County, developed an estimated flow of 20,000,000 feet of gas from broken lime at 3070-3129 feet. The flow declined to 9,000,000 feet in drilling to 3134 feet. The gas will be lubricated off with rotary. This test is ¾-mile southeast and also southwest of production, and occupies a favorable structural position for oil production in the 3500-foot lime. Standard Oil Company of Texas' University 1-4, NWc Section 4, Block 30, mile east by north of production in the northwest extension of Church & Fields area, was registering a low structural position in drilling hard lime at 3450 feet with an elevation of 2664 feet. It is 148 feet below the total depth of the nearest producer.

Revival of drilling in the McClintic pool, Crane County, is due to follow the recent purchase by John Mabee et al Duffy Oil Company's McClintic 320 acres, with 9 wells, for $119,000 cash. The new owner has started operations on McClintic-Cowden 10, NE NE NW Section 206, Block F.

### Test Arouses Interest

The northeast portion of the Permian basin aroused new interest early last week when Humble Oil & Refining Company's Matador 1, C SW NE Section 26, Block 1, Shock & Arnold Survey, 6 miles northeast of Dickens, passed up nominal show of oil saturation in the upper Pennsylvanian series. The recovery of a 10-foot section of sand, topped at 4989 feet, carrying evidence of oil caused a temporary halt of operations. Drilling was resumed several days later, and by mid-week had progressed beyond the 5100-foot level. This isolated test logged top of the anhydrite at 976 feet, and the Permian brown lime marker between 2092-2100 feet. Officials in charge elected to proceed with the completion of the 6000-foot depth contract assumed early in 1938 when the company acquired lease on about 466,500 acres of grazing land held by the Matador Land & Cattle Company. The lease

## WEST CENTRAL TEXAS Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Brown County—** | | |
| Hunter & Graham, T. J. Clark 1.. | 14 | 1195 |
| Lynn & Roush, Mullins 1..... | * | 1435 |
| McDonald & Cason, McDonald 2.. | * | 785 |
| G. P. Mitcham et al, Newton 4... | 26 | 1240 |
| C. Norman et al, Carter 1..... | * | 990 |
| Titsworth & Howell, Kuteman 1.. | 19 | 1202 |
| Trentman & Harvey, Sikes 1..... | * | 2600 |
| Westex O&G Co., L. J. Honea 1.. | ¶1 | 1537 |
| Whitesides & Rogers, Newton 3.. | 43 | 1228 |
| **Brown County (Wildcat)—** | | |
| Pet. Producers Co., Davis 1..... | * | 752 |
| **Callahan County—** | | |
| Earl Johnson et al, Smith 1..... | * | 440 |
| Kirk & Taylor, F. E. Clark 1..... | * | 851 |
| Warren & Kleiner, Clark 3..... | * | 832 |
| Williams 2 ..... | * | 743 |
| Williams 3 ..... | * | 810 |
| **Coleman County—** | | |
| P. A. Graves et al, F. Gillespie 1 | * | 2466 |
| Green & S. Owens, Westbrook 1.. | 200 | 1894 |
| Hart & Son, Sanderson 1..... | * | 1352 |
| **Coleman County (Wildcat)—** | | |
| Lynn & Jordan, Eads 1..... | * | 415 |
| **Comanche County—** | | |
| Loraine Oil Corp., Carwile 1..... | * | 2752 |
| Rush Oil Co., Morgan 1..... | * | 715 |
| **Eastland County—** | | |
| Sam Henderson et al, Strickland 1 | * | 1161 |
| **Palo Pinto County—** | | |
| A. Adkisson & Co., Costello 7.... | 45 | 2355 |
| Palo Pinto Oil Corp., Strawn Coal 24 ..... | ¶½ | 3075 |
| **Shackelford County—** | | |
| Charter O&G Co., Swenson 1-B... | * | 1673 |
| J. L. Douglas et al, Baker 2..... | 25 | 1898 |
| Fortex Oil Corp., McKeever 1.... | 5 | 3271 |
| Groover-Rose et al, Nail 1-B .... | * | 1450 |
| J. L. Hart & Son, Sanders 1..... | † | 528 |
| J. W. Keyes et al, Diller 4..... | 4 | 518 |
| C. J. Myers et al, Matthews 1.... | * | 1230 |
| West & Honea, Hill 2 ..... | * | 942 |
| **Shackelford County (Wildcat)—** | | |
| Groover-Rose & Iron Mt. Oil Co., Davis 1 ..... | * | 1849 |

*Failures; †Junked; ¶Million cu. ft. gas.

## WEST TEXAS Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Andrews County (Wildcat)—** | | |
| Rogers & Rogers, University 1-B.. | * | 4431 |
| **Crane County (Sand Hills)—** | | |
| Humble, J. B. Tubb 23.....5067 | | 4420 |
| **Crockett County (Crockett)—** | | |
| Gilcrease Oil Co., University-Humble 2-13 ..... | 70 | 1400 |
| **Ector County (Foster)—** | | |
| H. J. Brown, York & Harper, Inc., Gist 1 .....1341 | | 4277 |
| Broderick & Calvert, Johnson 2-A | 721 | 4280 |
| Hilton Oils, Inc., Witcher-I.T.L.O. 3 .....1536 | | 4170 |
| **Ector County (Goldsmith)—** | | |
| Continental Oil Co., T. P. Land Trust 3-C-25 ..... | 423 | 4285 |
| Gulf, Goldsmith 152 .....1732 | | 4198 |
| Landreth Prod. Corp., Scharbauer 4-O ..... | 673 | 4195 |
| Scharbauer 2-P ..... | 639 | 4202 |
| **Ector County (Harper)—** | | |
| Blackstock Oil Co., T. P. Land Trust 2-B .....2188 | | 4160 |
| John E. Mabee et al, P. Moss 5...1260 | | 4172 |
| **Ector County (North Cowden)—** | | |
| M. J. Delaney Co. et al, R. W. Smith 4 ..... | 720 | 4350 |
| Landreth Prod. Corp., T. P. Land Trust 4-A ..... | 244 | 4200 |
| Rushwold Oil Co., Woods (South) 1 .....1877 | | 4337 |
| W. K. Royalty Co., Smith-Amerada 2 ..... | 745 | 4276 |
| **Gaines County (Seminole)—** | | |
| Osage Drl. Co.-Atlantic Ref. Co., Tippett 1 ..... | 594 | 5139 |
| **Gaines County (Wasson)—** | | |
| Phillips Pet. Co., Wasson-Loffland 1 .....1029 | | 5000 |
| **Howard County—** | | |
| Magnolia, Hyman-Chalk 9.....1504 | | 2889 |
| **Jones County—** | | |
| Fred Browning et al, Avoca School 1 ..... | * | 3305 |
| Sandy Ridge Oil Corp., Steffens 5 | † | 1750 |
| **Pecos County (Masterson)—** | | |
| Childress Roy. Co., Shearer-Humble 1 ..... | * | 1545 |
| W. H. Street et al, Fromme-Standard 2 ..... | 157 | 1478 |
| **Pecos County (Pecos Valley)—** | | |
| M. H. Black et al, Pecos Valley 2-B ..... | 230 | 1570 |
| Peerless O&G Co., Pecos Valley 6-A | 349 | 1581 |
| **Pecos County (Wildcat)—** | | |
| J. R. Bell et al, Shearer-Gulf 1-C | * | 1992 |
| **Upton County (McCamey)—** | | |
| Basin Oil Properties, Inc., Baker 6-D ..... | * | 2342 |
| Hancock & Knox, Baker-Republic 4 ..... | 963 | 2273 |
| **Ward County—** | | |
| W. P. Luse & Ice, Blair 3..... | 240 | 2085 |
| **Winkler County (Emperor)—** | | |
| Bert Fields et al, Cowden-Pure 3-D ..... | 308 | 3009 |
| Texon O&L Co.-Group 1 Oil Corp., Cowden-Conoco 4 ..... | 364 | 3093 |
| **Winkler County (Kermit)—** | | |
| Magnolia, Walton 212 ..... | 807 | 3275 |
| **Winkler County (Keystone)—** | | |
| Standard of Texas, Baird 1..... | 230 | 3372 |
| **Yoakum County (Bennett)—** | | |
| Honolulu Oil Corp., Bennett 9.... | 984 | 5260 |
| T. P. Coal & Oil Co., Bennett 15.. | 452 | 5260 |
| Bennett 17 .....2244 | | 5245 |
| **Yoakum County (Wasson)—** | | |
| Continental, Sue Stevens 3.....1824 | | 4057 |

*Failures; †Junked; ¶Million cu. ft. gas.

covers portion of the ranch in Dickens, Motley, Cottle, Crosby and Floyd Counties.

Gulf Oil Corporation's Swenson 1-B, northeastern Garza County wildcat that gave promise of an oil producer from the Pennsylvanian at 7327-34 feet early last December, has not cleared up fishing job developed after plugging back to 6857 feet. This prospect caused a general lease play to the southeast and northwest, and more recent buying is centering upon Hale and Lamb Counties, where majors are paying up to $4 per acre cash bonus for 10-year leases, with 50-cent rental. Purchases are generally based upon earlier geophysical surveys.

### Logs Saturation

T. G. Shaw et al's Dean 1, SEc Labor 7, League 94, Mills County School Lands Survey, Cochran County semi-wildcat on acreage farmed out by The Texas Company, was awaiting casing at 4997 feet. Oil saturated lime was logged at 4907-27 feet, with an elevation of 3749 feet.

In Dawson County, the Daw-Tex Oil Company's Neeley 1, C NW NW T&P Section 28, Block 35, T-6-N, set protection string of 7-inch at 4370 feet, and was drilling at 4400 feet. Top of the brown lime section has been tentatively called at 3776 feet.

The Texas Company has 4 wells in process of completion in the Yoakum County sector of the Wasson field. These wells were started after the company entered negotiations for the sale of its holdings in the Wasson and Bennett areas to the Aloco Oil Company in order to take care of offset drainage. The deal is still pending. The company's Wooten 4, SE NE NW Section 892, flowed 205 barrels natural through tubing in 6 hours from lime at 5125 feet, and Smart 3 flowed 416 barrels initial through open tubing, with the hole bottomed at 5126 feet. The gas-oil ratio of both wells was estimated at 450 feet per barrel. Continental Oil Company's Stevens 3, C NE NE Section 895, earned a potential rating of 1824 barrels through ¾-inch tubing choke after using 10,000 gallons of acid in lime at 5010-57 feet.

# Texas Panhandle

## *Charge overproduction of Panhandle sour gas*

Thirty Texas gas operators were charged with overproduction of sour gas in the Panhandle at a hearing before the Texas Railroad Commission last week. Included in the group were most of the major gas producers in the area, who made little effort to deny that they were guilty of producing more gas from some wells than railroad commission orders had allocated to those wells.

A full commission heard the case, and operators explained that because commission orders lasted only 30 days and because there was no opportunity to compensate for overproduction, they were more or less forced to take their chances. They pointed out that land and royalty owners insisted that the full volume of gas allowed be produced from every well every day. Because of mechanical difficulties, it was frequently impossible to produce the exact allowable and no more, although they realized that they were faced with violation of commission orders if the allowable assigned was exceeded.

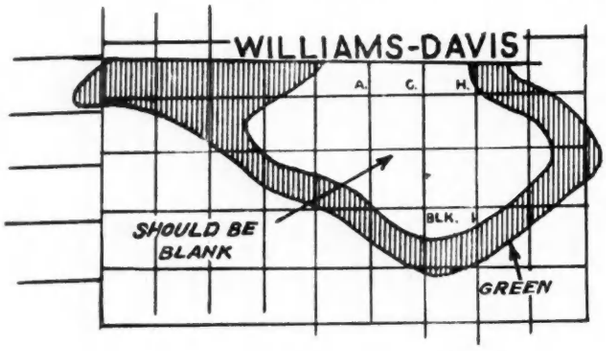
Another difficulty arose from the fact that carbon black companies which purchased residue gas in this area must have a constant supply to operate their plants, and this supply is not affected by seasonal fluctuations such as those which are encountered by producers of sweet gas used for light and fuel. The operators said that if an order was entered fixing an allowable for a period of four months, then they could adjust their takes from time to time and be sure that net production over the four months did not exceed the allowables assigned.

Some royalty owners who attended the hearing complained bitterly of the small checks they received in payment for gas and gasoline sold.

## TEXAS PANHANDLE Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Gray County—** | | |
| Continental Oil Co., J. T. Benton 2 | 625 | 3298 |
| King Oil Co., Baer 4-A | 463 | 3279 |
| Magnolia, Tom Catlin 6 | 334 | 3233 |
| S. & M. Oil Co., Worley 5 | 641 | 3225 |
| **Hutchinson County—** | | |
| Gibson Oil Corp., Harvey 1 | 554 | 3016 |
| Parton & Holt, Whittenburg 2 | 126 | 3091 |
| Phillips Pet., Cockrell 37 | 353 | 3068 |
| Thompson 10 | 306 | 3177 |
| Stanolind, Watkins 20-A | 464 | 3006 |

*Failures; †Junked; ¶Million cu. ft. gas.




**In redrafting of the large multi-colored insert map of the Texas Panhandle that appeared in The OIL WEEKLY of January 2, 1939, one error occurred. The area south of the Williams-Davis pool, shown above, appeared as in the "White dolomite, Subzone C-2, area," whereas it should have been blank. We hope that this small rough sketch of the district will correct this mistake.**

## *Cliffside gas producer boosts helium supply*

**Pampa, Texas.**—The supply of helium content gas from the Cliffside structure, Potter County, will be expanded through completion of Sinclair Prairie Oil Company and Parcomis Oil Company's Bush 1, C SW SE BS&F Section 23, Block 6, which has been plugged back from 6161 feet to 3591 feet after encountering hard granite. Pipe will be perforated opposite gas pays logged within the 3194-3530-foot level. Bush 1 was slated to test the Ordovician, or drill to 8000 feet. Granite wash was encountered at 5054 feet, or 1626 feet sub-sea, and the formation was virtually solid granite below 6100 feet.

## *Four month sour gas allowable order*

The Texas Railroad Commission has revised its sour gas order in the Panhandle field to provide for adjustment of production to conform with allowables. The new order became effective February 1, and continues in effect until June 1.

It provides that in the event a gas well is over-produced during one 30-day period, it shall be shut in or its production reduced so that the difference is made up during the succeeding 30-day period.

These changes were ordered as a result of testimony presented at a hearing held before the commission on January 30. The new order provides in part that:

"From and after the effective date of this order each operator of each gas well in the sour gas area of the West Panhandle field which is overproduced at the end of the calendar month shall so operate such well during the succeeding month that the total production from such well for the two month's period is not in excess of the total allowable of such well for the said two month's period. Any gas well which at the end of the calendar month is overproduced to the extent that its production for that month is in excess of the allowable for such month plus the allowable for the succeeding month shall be shut in until its accumulated allowable from the first day of the calendar month in which such overproduction occurred is equal to its total production since that date."

## *Lockridge hearing*

The Texas Railroad Commission has scheduled a hearing on the Lochridge field, Brazoria County, to determine whether wells in the field are producing efficiently under the present allowable. The hearing will be held in Austin, on February 10.

# North Texas Fields

***Lower Strawn production in prospect at Hull-Silk field. Drilling activity at K-M-A remains at low level.***

**Wichita Falls, Texas.**—Development of lower Strawn production in the northwest portion of the Hull-Silk field, Archer County, was in prospect last mid-week when Chapman & McFarlin's Wilson 1-E, south of Lot 1, Section 22, cored 13 feet of oil sand with shale and lime streaks. Operations were halted at 4260 feet to cement pipe at 4247 feet. This test failed to show for a producer in the upper Strawn. Bert Ligon and Deep Oil Development Company, a new operating unit for the area, were drilling near the 3000-foot level on Wilson-McCrory 1, NWc Section 25, offsetting three upper Strawn wells.

W. B. Omohundro et al's T. B. Wilson 1, near NEc H&TC Section 5, Block 3, northwestern Archer County wildcat, was drilling above the Strawn zone at 4265 feet. E. P. Griffin et al have announced location for W. T. Waggoner 1, SWc H&TC Section 3, A-201, near the Diversion Lake.

Activity in the K-M-A deep area remains at a low level with 6 new tests authorized the past week. The field is credited with 53 operations including 15 wells in process of completion, and 11 drilling with rotary above the Strawn.

A north offset to the deep oil strike made early this year on the west side of Nocona, Montague County, will be started this month by Rogers & Rogers et al, owners of the discovery. The group has been assigned The Texas Company's 150-acre lease adjoining the discovery 60-acre site, and are to start a test within 30 days, then take care of all offsets. The Texas Company will receive 1/16th over-riding royalty from the gross production until the production revenue of each well aggregates $32,500, then the over-ride becomes ¼ of the gross yield. A credit of $25,000 is provided for dry holes. Purchasers of leases avoided immediate drilling obligations, and the early development may be restricted to offsets created by the original well.

Benton & Holmes' Joe Bowers 1, discovery of the Bonita pool, eastern Montague County in mid-January, was conditioning the hole last week for proration gauge. Production is from mid-Strawn at 2887-98 feet, and earlier estimates rated the well at 15 barrels of 40.6-gravity oil hourly on swab.

Whitfield, Pearson & Grimes' B. Voth 2, western Cooke County oil strike made from Ellenberger at 1788-93 feet late in December, pumped 302 barrels of 40-gravity oil and 75 barrels water in 17 hours. The well flowed natural and no water was present when tested shortly after drilling the pay.

## NORTH TEXAS Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Archer County—** | | |
| Continental Oil Co., DeMoss 1-a | 122 | 979 |
| **Baylor County (Wildcat)—** | | |
| British American Oil Prod. Co., Green 1 | 160 | 2635 |
| **Clay County—** | | |
| Bridwell Oil Co., Thornberry 27, blk 5 | 19 | 1117 |
| W. H. Metzner et al, C. T. Taylor 2, sec 35 | * | 410 |
| Taylor & Seaberry, C. E. Graves 1, blk 87 | * | 789 |
| **Clay County (Worsham)—** | | |
| W. H. Gant et al, Worsham 7, sec 37 | 600 | 3948 |
| **Cooke County—** | | |
| Joe Beard et al, B. Voth 1 | * | 1834 |
| Trumter Oil Co., B. Voth 1 | † | 544 |
| **Grayson County (Wildcats)—** | | |
| Denver Prod. & Refining Co., Cannon 3 | * | 2414 |
| C. E. Marshall et al, F. Christman 1 | 6 | 927 |
| **Jack County—** | | |
| Danciger Oil & Refineries, Inc., Ivey 5 | 808 | 3109 |
| B. C. Gilmore et al, K. Hoelfle 1 | * | 491 |
| **Jack County (Wildcat)—** | | |
| N. Daves et al, K. D. Baker-Barnett 1, sec 2709 | * | 2370 |
| **Wichita County (K-M-A)—** | | |
| British-American O.P. Co., Martin 2, lse 2, sec 12 | 700 | 3784 |
| Continental Oil Co., Kempner 3-B, blk 18 | 112 | 3858 |
| Dorian, Geier Bros. & Jackson, Mitchell 1-B, sec 1 | 400 | 3914 |
| Farrell et al, Waggoner Bros. 29-C, blk 12 | 600 | 3975 |
| Hanlon & Buchanan, Inc., Fassett-Tuttle 7-B, sec 2 | 880 | 4005 |
| King Oil Co., Wigley 4-A | 365 | 3878 |
| Panhandle Ref. Co., J. Stone 6-A | 536 | 3822 |
| Staley Oil Co., Gose-Scott 1, blk 36 | 424 | 3893 |
| Ven-Mex Oil Co. of Texas, Griffin 1-A | 2400 | 3834 |
| **Wichita County—** | | |
| E. M. Crump et al, J. H. Oats 1 | * | 247 |
| Fisher & Dudley, F. P. Warren 2 | 12 | 1380 |
| Panhandle Ref. Co., J. Stone 13 | * | 1795 |
| **Wichita County (Wildcats)—** | | |
| E. G. Boardman et al, J. Stevenson 1, blk 56 | * | 1448 |
| Pois & Schlutz, Ed Foster 1-N | * | 2104 |
| **Young County—** | | |
| Cable Oil Co., J. Williams 9 | 10 | 566 |
| Collier & Connor, H. M. Ford 1-A | 30 | 3120 |
| Union Producing Co., M. G. Cheney 1 | * | 4415 |

* Failures; † Junked; ¶ Million cu. ft. gas.

## *Seek 40-acre spacing for Baylor discovery*

British American Oil Company and other operators have requested 40-acre spacing for wells around the newly discovered area in Baylor County where the company has completed its Green 1. The Green tract is located in Survey 215, T.&N.O. Railway. The hearing was held last week before the Texas Railroad Commission.

Tide Water Associated Oil Company and Indian Territory Illuminating Oil Company joined in the request.

There is only one well in the field, which is producing from the Canyon lime; another is drilling. The initial producer has declined to 98 barrels of oil a day and 100 barrels of water.

Testimony at the hearing showed that there was about 400 feet of gas in solution in each barrel of oil but engineers believed that the wells will all be on the pump.

Rules proposed provided for proration on acreage and per well, with 50 percent allocated on each factor. A tolerance of 30 acres would be allowed for proration purposes.

## *Bureau reports investigation of gas-air flow in sands*

Results of studies of the flow of air and natural gas through porous media are discussed in a report just issued by the Bureau of Mines, prepared by T. W. Johnson and D. B. Taliaferro, Jr.

In dealing with fluid flow through oil and gas reservoir sands, the permeability of porous media is perhaps the most significant factor and the one that recently has received a great deal of study, it is pointed out. Most investigators have considered only straight-line (viscous) flow in which all particles move parallel to the walls of the flow channel at relatively low velocities, but the exact type of flow that takes place in an oil or gas reservoir has yet to be provided.

In the investigation made by the Bureau of Mines, flow relationships have been studied over a wide range of flow rates with air and natural gas flowing through a variety of unconsolidates, sands, lead shot, and several hundred specimens of consolidated sandstone and limestone taken from oil and gas-producing formations. On test specimens 1½ inches long, the differential pressure across the specimen was varied from three inches of water pressure to 800 pounds per square inch, so that flow conditions included straight-line, transitional, and turbulent flows.

An empirical flow formula, it was explained, has been developed by bureau engineers to cover the entire range of flow conditions covered in their investigation. The terms in this formula are such that at low rates of flow the value of one term is almost nil and may be neglected, leaving a formula equivalent to Darcy's law for straight-line flow; but with increasing velocities this term decreases while a second term increases, until, at high velocities, the first term approaches nil and may be neglected and the remaining formula is similar to the usual turbulent-flow formulae. For intermediate flow rates or transitional flow all terms in the equation are significant.

The bureau report describes the equipment used in making the high-pressure flow tests as well as that used in making routine permeability determinations and, for the benefit of engineers setting up equipment to make permeability determinations, figures are given showing the construction of the specimen holder, core bits, orifice meters and other auxiliary equipment. In an appendix to the report, results are given for several hundred routine determinations for porosity and permeability on oil and gas-producing sands from 12 states, including the results on five continuous cores.

Copies of the report may be secured from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a price of 10 cents, by referring to Technical Paper 592, "Flow of Air and Natural Gas Through Porous Media."

# East Texas Fields

***Third Lower Trinity producer at Opelika is field's best. Further drilling in this area to await line outlet.***

**Tyler, Texas.**—The third lower-Trinity completion in the Opelika pool, Henderson County, is rated as one of the largest distillate producers among the 9 deep wells falling within this classification in the Woodbine basin. The productive limits of the pool were broadened 1¼ miles to the northwest when Tide Water Associated Oil Company et al's McGee 1, R. Acosta Survey, gauged 436 barrels of 61-gravity distillate and 7,900,000 feet of gas through ½-inch tubing choke in 24 hours. The open flow of gas was rated at 13,600,000 feet daily. Production is from 47 perforations opposite the Conquina lime member of the lower Glen Rose at 8170-80 feet. Seven-inch pipe was cemented at 8212 feet, or 4 feet off bottom. The well has been closed in, and registers 3100 pounds pressure on the tubing and 3220 pounds on the casing. Additional drilling in the area will likely await the arrival of a gas line outlet and market.

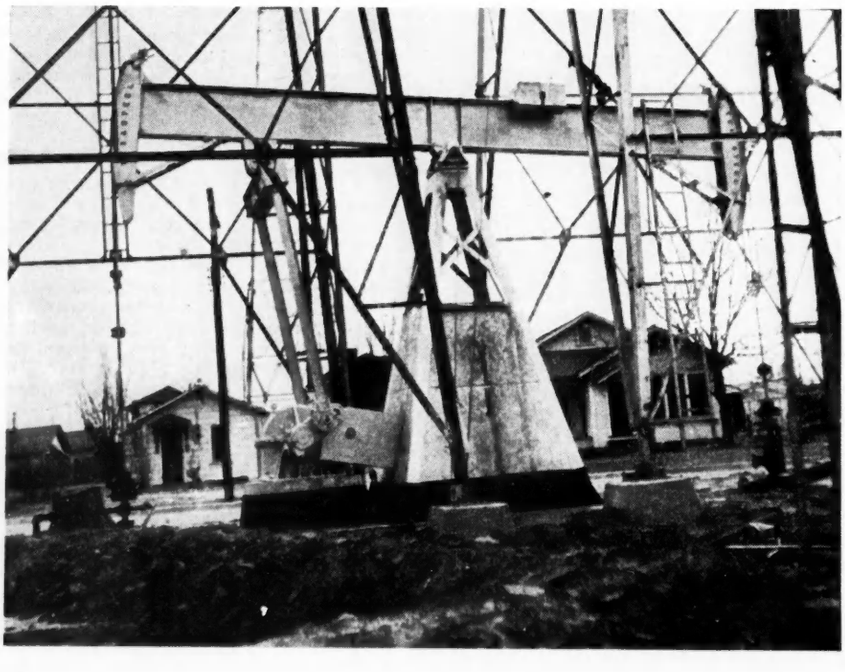
Re-test given Barnsdall Oil Company's Tubbs 2, recent lower-Trinity completion at 7612 feet on the east edge of the Cayuga field, rates the yield at 80 barrels of distillate and 1,000,000 feet of gas daily through ¾-inch tubing choke. The four gas-distillate deep wells in this area are more fortunately situated from a revenue standpoint in that the gas residue arising from distillate production can be utilized in repressuring the Woodbine oil sand.

The two gas-distillate deep wells at Willow Springs, Gregg County, and a single producer at Chapel Hill, Smith County, are disposing of gas residue in the East Texas field.

Humble Oil & Refining Company's Jim Burns 2, east offset to production in the Navarro Crossing field, Houston County, was flowing 7 barrels hourly, with 12 percent drilling fluid, while cleaning itself through ⅛-inch tubing choke. Production is from sand section at 5880-94 feet, and pipe was cemented at 5892¼ feet to exclude the upper gas in the saturated zone. The close relative position of the gas and bottom-hole water to the thin oil section calls for accurate logging and casing measurements to attain commercial oil production.

Overton Refining Company has utilized the density of wells in the townsite of Kilgore by using the same beam to pump two wells.

The wells are located on the Florence townsite lease, Mary Van Winkle survey, Gregg County. The pumping unit is electrically driven.



## *East Texas wildcat to drill near Zwolle extension*

**Shreveport.** — Superior Oil Corporation has abandoned Long-Bell Lumber Company 1, S.P.R.R. Survey 5, San Augustine County, Texas, at 5723 feet in lime, after logging porous lime with some gas showing at 5628-52 feet; elevation is 367 feet. Top of Georgetown lime was 5595 feet. The company is planning to move this rig to the D. Gonzales Survey, Shelby County, east of the village of Patroon, and 6 miles northwest of the shallow Blue Lake field, Sabine Parish, Louisiana, for a test. In this same county, Hunt Oil Company has assigned 3700 acres of its leases to a subsidiary, Placid Oil Company.

East of Hemphill, Sabine County, and one mile north of Hugo Allen's Jennie Brooks 1, Isaac Lowe Survey, abandoned below 5800 feet after a gas showing at 5644 feet, Foster and associates are planning to drill a test. Allen, H. R. Smith and others will furnish some of the acreage for the proposed block. Republic Production Company has a torsion balance unit working east of Hemphill. Shell Petroleum Corporation has seismograph unit working near Linden, Cass County.

Pundt and associates' Pickering Lumber Company 1, W. M. Snyder Survey, Shelby County, at 5139 feet, and perforated at 5065 feet, through ¾-inch choke made 39 barrels of 49-gravity distillate in 17½ hours with estimated 40 million cubic feet of gas daily, with a gas/oil ratio of 132,000 to 1. Shut-in tubing pressure was 2400 pounds. The well was shut in by railroad commission order, a request for a 30-day extension for testing having been denied. This is in the Joaquin field, 1000 feet south of the nearest of three gas-distillate wells in the Glen Rose.

## EAST TEXAS Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Joiner Area—** | | |
| Cockburn & Boase, Green 16 (43.89-ac) | 2500 | 3831 |
| Humble, J. E. Wheelis 27 (168.4-ac) | 2600 | 3760 |
| P. G. Lake, Inc., V. E. Reid 19 (120.1-ac) | 800 | 3617 |
| Magnolia, A. T. Tyiska 16 (116.94-ac) | 600 | 3818 |
| Placid Oil Co., R. J. Vinson 9 (59.47-ac) | 2500 | 3697 |
| Max Rubin et al, W. P. Keeling 2-C (4-ac) | 3200 | 3692 |
| R. G. Trippett et al, Keeling 8 (25-ac) | 4000 | 3735 |
| Zephyr Oil Co., E. B. Alford 2 (4.65-ac) | 120 | 3620 |
| **Kilgore Area—** | | |
| Humble, L. D. Crim 184 (914.51-ac) | 4000 | 3576 |
| D. Thomas 21 (59.05-ac) | 3600 | 3590 |
| T. D. Humphrey et al, A. Spear 20 (20.3-ac) | 2500 | 3577 |
| Overton Ref. Co., I&GN Co. 35 (19.58-ac) | 1200 | 3565 |
| Refugio Oil Co., Hughey-Barber 6 (18.2-ac) | 6300 | 3550 |
| Sun, C. Brown 16 (100-ac) | 7600 | 3674 |
| Fox Wood-Penn Oil Co., L. Morse 6 (7-ac) | 6000 | 3645 |
| **Longview Area—** | | |
| Louise & A. P. Carr, G. W. Richey 5 (6.07-ac) | 6200 | 3558 |
| Gen'l American Oil Co., G. E. McGrede 2-B | 7000 | 3642 |
| Kewanee Oil Co., Fee 37 (168.77-ac) | 9200 | 3598 |
| Rancho Oil Co., J. K. Edwards 21 (106-ac) | 3000 | 3621 |
| Lewis Prod. Co.-Selby O&G Co., Snavely 41-B (361.2-ac) | 100 | 3630 |
| Shell, H. Hampton 26 (169-ac) | 7500 | 3736 |
| H. Hampton 27 (169-ac) | 7500 | 3726 |
| Turnbow et al, Persons 4 (20-ac) | 2500 | 3502 |
| **Falls County (Wildcat)—** | | |
| R. L. Seastrunk et al, J. B. Trewitt 1 | * | 1202 |
| **Titus County (Talco)—** | | |
| Humble, Blackburn 1-W | * | 900 |
| Humble-L. Clark 3 | 173 | 4331 |
| **Harrison County (Waskom)—** | | |
| Geyer Oil Co., Vincent 7, Chas. Davenport sur | 6 | 2456 |
| **San Augustine (Wildcat)—** | | |
| Superior Oil Corp., Long Bell 1, S. P. R. R. Sur 5 | * | 5723 |

*Failures; †Junked; ¶Million cu. ft. gas.

# Southwest Texas Fields

***Oil production established at Riverside, Nueces County. East Alice extended northwest by Vicksburg producer.***

**Corpus Christi.**—Successfully cutting off the excessive gas flow, which apparently had channeled from above, Seaboard Oil Corporation has established the Riverside field of Nueces County as an oil producer. The test is Ellen C. Wilson 2, in Block 9, Wright Lands Subdivision, and 4650 feet west of a blowout which opened the field. The new producer is bottomed at 5037 feet with casing set on bottom. Sand had been logged from 4972-98 feet, production first being attempted through perforations at 4994-97½ feet, resulting in a gasser spraying a little oil. After the squeeze job, casing was perforated at 4995-98½ feet with 30 shots, where second completion was made.

Republic Natural Gas Company's Seaboard Oil Corporation 1, 6000 feet south of Seaboard Oil Corporation's crater, was coring for the 4900-foot sand, while Heep Oil Corporation et al's Smith 1, 8500 feet south and west of the blowout was nearing that level. Several other tests are at preliminary stages in the field.

Keen interest has been developed in the East White Point field of San Patricio County following two key extensions. Homer Easterwood and J. B. Cage of Taft extended the Frio sand production 9000 feet west and deep into the old White Point gas field when Dunn 1 flowed an estimated 5 barrels of oil per hour through ⅛-inch choke under pressures of 500 and 650 pounds, on tubing and casing, respectively. The well found the sand at 5672-76 feet.

Northeast of the above well and between it and the East White Point field, Houston Oil Company's Baldwin 2, cored oil sand at 5655-66 feet and sand and shale at 5666-71 feet. The hole is bottomed at 5681 feet, casing being landed at 5678 feet. It is testing through perforations.

Magnolia Petroleum Company's Sam Maun 1, 5 miles southwest of Shell Petroleum Corporation's Von Blucher strike, is coring and drilling below 7080 feet. It is expecting to pick up one of the sands which showed in the Von Blucher within the next few feet. The Von Blucher test, discovery of the first field of the year in South Texas, flowed 32 barrels of 54-gravity distillate and 1,300,000 cubic feet of gas through 3/64-inch choke under 3500 pounds working pressure after pipe had been perforated at 7555-60 feet in the Vicksburg sand.

About 9 miles north of Alice, and in Jim Wells County, H. H. Howell's W. T. Wright 1, tried to blow out from a sand at 6542 feet, but was controlled and is near contract depth of 6750 feet, where electric logging device is to be run.

Henshaw Brothers added several locations to the northeast side of the East Alice field with Thigpen 1. After coring sand 5330-60 feet, casing was landed on bottom at 5370 feet and perforated for completion. It is one of the best producers in the field, and is making only a small amount of gas.

Union Producing Company's third well in the North Agua Dulce area of Nueces County was a failure, being abandoned at 4950 feet. It is on the A. B. Simmonds tract about 1500 feet northeast of the discovery.

Phillips Petroleum Company et al's Paveleck 1, E NW Section 1, and 3000 feet northeast of the La Rosa field, Refugio County, is a completion estimated at 10 barrels of oil per hour through 5/32-inch choke under pressures of 725 pounds on tubing and 1200 pounds on casing. The production is from perforations at 6315-27 feet, casing having been set through the sand section logged at 6312-31 feet.

Magnolia Petroleum Company further widened the West field, Jackson County, to the west with Mrs. Nannie West A-7. The well cored oil sand at 5078-97 feet, drilled to 5113 feet and on a 12-hour gauge flowed 165 barrels of pipe line oil through 3/16-inch choke. It showed pressures of 550 pounds on tubing and 850 pounds on casing and a gas/oil ratio of 294 to 1.

## *Zavalla County test has sulphur water in Edwards*

**San Antonio.**—Wilcox Oil & Gas Company's T. I. Gilliam 3, north of the discovery well of Batesville, Zavalla County, has been abandoned at 3927 feet after encountering sulphur water in the Edwards limestone just above that level. The first test on the block flowed 210 barrels per hour from the same formation, but the second operation proved a failure. A fourth is to be drilled ½-mile to the east of the discovery. The exploration is being watched with much interest as it is in a territory where there has been little drilling. Thousands of acres were assembled under lease after the first well came in.

On the Big Foot structure, northeastern Frio County, Hickok & Reynold's San Antonio Joint Stock Land Bank 1, Section 54, was abandoned at 3555 feet, after finding sulphur water in the Edwards limestone topped at 3493 feet. The cuttings had oil stains,

## SOUTH TEXAS Completions

### SAN ANTONIO DISTRICT

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Bexar County—** | | |
| Noake, Oppenheimer 1, Blackhill area (WC) | * | 1005 |
| **Blanco County—** | | |
| Johnson, Glasscock 1, section 50 (WC) | * | 1005 |
| **Caldwell County—** | | |
| Coffield, Smith 1 (Salt Flats) | 48 | 2699 |
| **Frio County—** | | |
| Hickock and Reynolds, San Antonio Joint Stock 1, survey 54 (WC) | * | 3555 |
| **Guadalupe County—** | | |
| Hollifield, Broadnax 1, 2 mi ne Kingsbury (WC) | * | 2232 |
| Texas Company, Anderson 9 (Darst Creek) | 188 | 2546 |
| **Medina County—** | | |
| Cromwell, Tondrie 1, 1 mi w Noonan (WC) | * | 1336 |
| Felty, Thompson 1 (Chicon Lake) | † | 90 |
| Wagener, Medina Irrigation Farms, A-33 (Chicon Lake) | 3 | 347 |
| **Milam County —** | | |
| Jones, Timmerman 1 (Minerva-Rockdale) | 2 | 556 |
| **Travis County—** | | |
| Raesz & Featherstone, Jones 1, 15 mi e Austin (WC) | * | 1110 |
| **Williamson County—** | | |
| Burnette, Reed 1, 5 mi nw Liberty Hill (WC) | * | 1045 |

### CORPUS CHRISTI DISTRICT

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Aransas County—** | | |
| Shasta, Carlock 1 (McCampbell) | 1000 | 7142 |
| **Calhoun County—** | | |
| Humble Oil & Refining Company, Welder 23-A (Heyser) | 600 | 5478 |
| **Colorado County—** | | |
| Coyle-Concord, Powell 4-B, Garwood area (WC) | 200 | 6159 |
| **Hidalgo County—** | | |
| Davis & Harrison, Guerra 1, (Samfordyce) | 82 | 2888 |
| **Jackson County—** | | |
| Magnolia, West 7-A (West Ranch) | 700 | 5113 |
| **Jim Wells County—** | | |
| Bowles, Ragland 5 (Alice) | 500 | 5030 |
| Davis, White 1 (Alice) | * | 3640 |
| Howell, Bankers Mortgage 1 (East Alice) | 500 | 5388 |
| Montour, Lewis & Shelby, Lemond 4 (Alice) | 350 | 5291 |
| Shell, Von Blucher 1, survey 362 (WC) | ¶10 & 35 | 7845 |
| **Karnes County—** | | |
| Fomax, Pfluger 1, 4 mi s Falls City (WC) | * | 1969 |
| **Live Oak County—** | | |
| Simmons Oil, McGriff 6-B (Oakville) | 102 | 2832 |
| **Nueces County—** | | |
| Union Producing, Simmonds 3 (North Agua Dulce) | * | 4950 |
| **Refugio County—** | | |
| Coronado, Spaulding 4 (LaRosa) | 600 | 6352 |
| Morgan, Mitchell 4-D (Refugio) | 400 | 6590 |
| Quintana, Williams 6 (Tomoconnor) | 1500 | 5925 |
| **San Patricio County—** | | |
| Grote & Corgey, Dinsmore & Scrivner 2 (McCampbell) | 1000 | 7140 |
| Usher 1 (McCampbell) | 1100 | 7160 |
| Humble, Speer-Fee 1 (East White Point) | 560 | 5665 |
| Plymouth, Ficke 2 (East White Point) | 600 | 5652 |
| Kellogg 3 (East White Point) | 650 | 5680 |
| Shell, Kirk 3 East White Point) | 550 | 5650 |
| Slimp & Graham, Moeller 1 (McCampbell) | 1000 | 7170 |
| **Victoria County—** | | |
| Barnsdall, McFaddin 15 (McFaddin) | 165 | 4416 |
| Edwards Drilling, Strobel 1, 6 mi s Raisin (WC) | * | 5506 |
| Union, Keeran 2 (Keeran) | 1600 | 7021 |

### LAREDO DISTRICT

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Duval County—** | | |
| Coffield, Peters 2 (Rancho Solo) | * | 1906 |
| Cox & Hamon & Gorman-Yoakam, Cuellar-Points 13 (Hoffman) | 77 | 2886 |
| Cuellar-Points 16 (Hoffman) | 115 | 2816 |
| Dutex, State 3 (Piedre Lumbre) | 69 | 2086 |
| Goldrus Drilling, Society Propagation of Faith 1, sur 7 (WC) | * | 4665 |
| Hiawatha, Miller 7 (Longhorn) | 450 | 4920 |
| Lanning, Noake & Evans, Peters 6 (Rancho Solo) | 102 | 1883 |
| Magnolia, Duval County Ranch 2 (63) (Casa Blanca) | 49 | 1224 |
| Duval County Ranch 16 (201) (Eagle Hill) | 60 | 1491 |
| Miller & Sons, Fee 1-A (Longhorn) | 500 | 4044 |
| Porter-Wheelock & Collins, Driscoll 10 (Fitzsimmons) | 425 | 4356 |
| Fitzsimmons 7 (Fitzsimmons) | 450 | 4579 |
| Sun Oil, Brueggeman 8 (Fitzsimmons) | 375 | 4296 |
| Texas Inland, Adami 1, survey 47 (WC) | * | 1297 |
| **McMullen County—** | | |
| Bishop Oil Company, Nueces Land & Livestock 4-B (Munson) | 84 | 1213 |
| Edwin Jones, Ezzell 58 (Ezzell) | 64 | 1480 |
| Jones 59 Ezzell (Ezzell) | 72 | 1557 |
| 60 Ezzell (Ezzell) | 149 | 1563 |
| 61 Ezzell (Ezzell) | 127 | 1565 |
| 62 Ezzell (Ezzell) | 225 | 1558 |
| Ohio Fuel, Nueces Land & Livestock 4 (Munson) | 125 | 1210 |
| **Webb County—** | | |
| DeLange, Cuellar 1, section 134 (WC) | * | 2757 |
| Superior Oil, Laurel 1-C (North Killam) | 100 | 2004 |
| **Zapata County—** | | |
| Buffalo, Hinnant 2-C (Mirando Valley) | 165 | 1909 |
| Nordan & Morris, Haynes 4-C | 40 | 1217 |
| (Comitas) | 40 | 1217 |
| Haynes 6-C (Comitas) | * | 1251 |

*Failures; †Junked; ¶Million cu. ft. gas.

but production could not be developed.

A new shallow producing area 20 miles southwest of San Antonio was considered opened when Charles Schreiner, Jr., acting as trustee, completed Barney McCloskey 1 as a small pumping well, estimated at 5 barrels per day. The Bexar County operation is in the F. L. Desaque Survey. It topped a series of sands and sandy shale streaks from 775 feet to the bottom of the hole at 1400 feet. Several tests are now active in the general area.

### *Live Oak County pool opener flows 11 barrels hour*

**Laredo.**—South Texas' second oil field of 1939 and first for the Mirando district of this year was placed on production when Alvin Brauer, R. P. Holland and E. H. Smith completed H. M. Bonham et al in Live Oak County. The well pumped at the rate of 11 barrels of 23-gravity crude per hour from the Government Wells sand at 1390-97 feet.

The discovery is one mile south of the prolific shallow Ezzell field and is in the northeast corner of Block 3009, Section 59, of the C. F. Simmons Farm Lots Subdivision. It is in the center of a well broken block of leases, held entirely by independent operators. Inexpensive drilling and apparent prolificness of the pool indicates an immediate drilling rush.

Texas Inland Oil & Gas Company's Adami 1, Block 9, of the AB&M Survey No. 47, in northwestern Duval County, developed salt water when tests were made at 1289-97 feet in the lower Mirando sand. It appeared to be the discovery well of a new field, but failed to materilalize.

Wildcatting mainly centers around the eastern portion of Duval County, where a number of Yegua sand tests are being commenced on general trend with the Sweden-Benavides production.

Key States Drilling Company's Fitzsimmons, one mile northwest of the Fitzsimmons pool, Duval County, was going ahead near the expected 4300-foot Pettus sand. It is reported logging sufficiently high to be encouraging.

Northeast outpost to the Sweden field, Gravis and Doran's Parr 1, recovered a little mud and a slight show of oil in the Gravis sand at 5070-80 feet and was going ahead.

Twin-well drilling program in the new Longhorn pool is well underway with operations to the 4000- and 4900-foot sands providing good producers.

The North Killam field of Webb County received a set back in Superior Oil Company's Laurel Brothers 2-C, just southeast of production, which showed salt water in the Mirando sand on drillstem test at 2031-50 feet. It also showed salt water and gas in the Rosenburg sand and was waiting on orders at 2587 feet.

### *Kelsey production extended*

Mission. — D. D. Oil Company was continuing its efforts to open crude production in the Rincon area of Starr County. Dallas Joint Stock Land Bank 1, Survey 226, was testing through perforations at 4173-90 feet.

Humble Oil & Refining Company added another 1866 feet to the south end of the Kelsey pool when McGill Brothers 3 was completed at 4728 feet. It logged the sand at 4717-26 feet and made an average well for the field. The producer is the third to be completed in the Brooks County Sector of the field.

# Texas Gulf Coast

***Polk County test in Wilcox believed important strike.***

***Clear Lake extension test has substantial salt water flow.***

**Houston.**—The first Wilcox strike for the year in the Texas Gulf Coast was at Ace, Polk County, where Peyton Brothers' Kirby Lumber Company B-3, G. S. Thomas Survey, logged oil sands in the formation and made a drill-stem test which showed pipe line oil. The well has been shut down waiting decision to set pipe or core deeper into the oil sand. Broken sand was topped at 7735 feet and cored to 7749 feet where oil sand was encountered. The hole was then cored to 7755 feet and was still in sand showing oil. The drill stem test was from 7735 to 7755 feet, and in 15 minutes through ¼-inch chokes, recovered 20 stands of 34.4-gravity oil, 10 stands of mud and no salt water. The working pressure was 70 pounds. The sand tested 4.6 by volume.

The new Ace strike is the second Wilcox discovery along the Gulf Coast this year. The first was at Eola in Avoyelles Parish, where Sid Richardson completed Hasa Investment Company 1. Ace appears to be the third important oil field in the Texas Gulf Coast to produce from Wilcox. The first was at Joe's Lake, Tyler County, estimated potentially at 200,000,000 barrels of oil, and the second at Segno, Polk County, east of Ace, and this is estimated good for over 8,000,000 barrels. Ace has been producing oil for some time from the Cockfield but has never been considered a first class oil field.

Shell Petroleum Corporation, one of the major lease holders at Ace, has made location for Doucette 1, 466 feet out of the northwest corner of F. L. Doucette 136.46-acre tract in the P. A. Sublett Survey. It is a south offset to the Payton Brothers well.

Southwest of Palacios, Matagorda County, Sun Oil Company's Cavallin 1, J. Duncan Survey, was drilling cement plugs at 8505 feet after setting 9⅝-inch casing. Side-wall cores were taken around 7900 feet but failed to show anything of commercial value.

#### Clear Lake Well Has Too Much Water

A quarter-mile northeast of production at Clear Lake, Harris County, Humble Oil & Refining Company's West Fee C-3 showed oil and salt water when drilled to 5976 feet in sand topped at 5925 feet. Oil sand was topped at 5902 feet. Casing was perforated with five shots from 5933 to 5935 feet and it came in flowing 12 barrels per hour of fluid, 60 percent salt water, 37 percent oil and 3 percent sand. Perforations have been squeezed. Fee C-4 was abandoned at 6042 feet in salt water sand, topped at 5995 feet.

Northeast of production at League City, Galveston County, Phillips Petroleum Company's Patton 1, deepest well in the field, is drilling cement plugs at 10,412 feet after 5½-inch casing was set. Hole was drilled to 10,535 feet. The well showed possible water sands at 10,115 to 10,180 feet and logged some broken shows up the hole. The company's Stewart Title Company 1 was drilling in shale at 9230 feet after coring salt water sands at 9118 to 9158 feet. A show of oil was cored in the test at 9035 to 9081 feet. Ott 1 was drilling in shale at 9430 feet after encountering salt water sands at 9110 feet. Gas sand was encountered at 9070 feet.

Northwest of production at Big Creek,

**Showing location of the latest Wilcox strike.**

Ft. Bend County, Nat W. Hunter's Lingneau 1, was conditioning mud at 6000 feet before drilling deeper. The well has cored several broken sands which have shown oil, gas and salt water. A core from 5066 to 5138 feet had an odor of oil and gas and a salty taste. From 5147 to 5172 feet was sand showing oil and salt water, and from 5175 to 5217 feet was salt water sand. A core taken from 5223 to 5247 feet had an odor of oil gas but a salty taste.

On the flank at Thompson, Ft. Bend County, Humble Oil & Refining Company's Davis 4 was waiting on cement to set after coring salt water sands at 5440-5450 feet. Cores from 5250 to 5325 feet showed oil and gas. A drill-stem test at 5285 to 5325 feet recovered gas with pressure 350 pounds.

### New Sand at Esperson

On the southeast flank at Esperson where General Crude Oil Company discovered a new sand the past week, the company has made a second location. Pearl Burgess 1 is on a 160-acre tract in the A. McNeil Survey, 466 feet from the east line and 2000 feet from the north line of the tract. The discovery well for the new sand flowed 507 barrels of pipe line oil daily through ¼-inch choke, tubing pressure was 1020 pounds and casing pressure 1650 pounds, from 7305 to 7335 feet.

Sun Oil Company's well at Echo, Orange County, which has indicated a new field, has been turned through the separators. Lutcher Moore 1 was making 100 barrels of fluid daily, 22 to 85 percent salt water and the balance oil through a ¼-inch choke. Tubing pressure was 750 pounds, with hole bottomed at 9010 feet.

## TEXAS GULF COAST
## Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Anahuac—** | | |
| Humble, Tyrell 21 | 637 | 7091 |
| **Bammel—** | | |
| Hamil & Smith, Majorwitz 1 | * | 7006 |
| **Batson—** | | |
| John Deering, Hooks 7 | * | 5595 |
| McLean 1 | 32 | 5478 |
| **Boling—** | | |
| R. B. Fields, Baker 1 | * | 5059 |
| **Clam Lake—** | | |
| Shell, McFaddin-State 1 | 150 | 6176 |
| **Cedar Point—** | | |
| Standard of Texas, State 35-118 | 651 | 6025 |
| **Clear Lake—** | | |
| Humble, Fee C-4 | * | 6042 |
| **Esperson—** | | |
| General Crude, Esperson Fee 1 | 507 | 7335 |
| **Fairbanks—** | | |
| Amerada-Stanolind, Bullimore 3 | 63 | 5852 |
| Hahl K-3 | 164 | 6852 |
| Marreiette 2 | 161 | 6884 |
| Housh & Thompson, Yerks 2 | 155 | 6823 |
| Sinclair, Goodykoontz 2 | 147 | 6475 |
| Smith & McDaniels, Stephens 2 | 132 | 6856 |
| **Friendswood—** | | |
| Humble, Goodwin B-9 | 589 | 6044 |
| West Prod. Co., B-3 | 573 | 6044 |
| **Hastings—** | | |
| Humble, Brown C-4 | * | 6162 |
| **Magnet—** | | |
| Texas Co., Broussard 4 | 114 | 5546 |
| **Old Ocean—** | | |
| Harrison & Abercrombie, Armstrong 4 | 350 | 10,606 |
| Chenault 3 | 168 | 10,516 |
| Sun, Campbell 1 | 406 | 10,400 |
| **Orange—** | | |
| Keowen Oil Corp., Lutcher Moore 1 | 151 | 5619 |
| **Spurger—** | | |
| Republic Prod. Co., Hurd 16 | 547 | 7703 |
| **Tomball—** | | |
| D & L Prod. Co., Bell 1 | ¶2½ | 5604 |
| **Withers—** | | |
| Texas Co., Pierce Estate B-26 | 72 | 5546 |
| Pierce Estate C-55 | 202 | 5544 |
| **Waller County—** | | |
| Providence Oil Co., Muske 1, n of Brookshire | * | 6618 |

* Failures; † Junked; ¶ Million cu. ft. gas.

# South Louisiana

***Bastian Bay wildcat indicates possible new field opened. Eola Wilcox discovery well flows 900 barrels daily.***

**Lake Charles.**—The Texas Company's Bastian Bay 1, Bastian Bay, Plaquemines Parish, is being watched with much interest as it may be the discovery well for a new field. The wildcat was coring below 8295 feet in sandy shale. A show of oil was reported in 3 feet of sand from 7952 to 7955 feet. It will probably make a deep test.

On the Paradis prospect, St. Charles Parish, The Texas Company's L. L. E. Paradis 1, Section 39-14s-20e, was drilling in shale at 8810 feet. This wildcat is reported to have cored several oil sands up the hole.

A new oil sand was discovered at Sweet Lake, Cameron Parish, last week by Pure Oil Company's Yount-Lee 14, Section 12-13s-8w. Casing was perforated from 7137 to 7142 feet and a drill-stem test flowed oil in 14 minutes. Screen and liner were set and the well came in flowing 16 barrels of 35.6 corrected gravity oil per hour through a 14/64-inch choke. Tubing pressure was 2300 pounds and casing pressure 2285 pounds. Hole was drilled to 7451 feet.

The second oil producer was indicated at Lake Verrett, St. Martin Parish, last week wen Shell Petroleum Corporation's Jeanerette Lumber Company 2, Section 14-12s-12e, made a drill-stem test at 8040-8056 feet and in 15 minutes recovered 12 stands of pipe line oil through ¼-inch chokes. Seven-inch casing has been set at 8040 feet for production test.

South of production at Gibson, Terrebonne Parish, Shell Petroleum Corporation has abandoned Kuntz 2 at 10,650 feet in shale. The hole however was plugged back to 9900 feet and will be completed as a salt-water-disposal well.

At Lake Pelto, Terrebonne Parish, The Texas Company found a new sand in State Lake Pelto 22, Section 8-23s-18e, but it failed to produce oil when tested. The oil sand was cored from 5153 to 5135 feet, 5163 to 5175 feet and 5100 to 5117 feet. Seven-inch casing was set at 5225 feet after coring to 5368 feet in shale. Lake Pelto has produced from 1250 to 1765 feet, 5400 to 5465 feet, 6100 feet, 6200 feet, 6400 feet, and 6600 feet.

Northeast of production at Lafitte, Jefferson Parish, The Texas Company's School Board 1, 16-17s-24e, was conditioning mud at 11,960 feet after encountering a sand showing oil and gas at 11,941 feet, and will core deeper. This show indicates a possible new deep oil sand for the field. The Texas Company has made location for State Bayou Norman 2 at Lafitte, Jefferson Parish. It is 1502 feet north of the south line and 930 feet east of the west line of Section 21-17s-24e, in Bayou Norman. It is near the company's State Bayou Norman 1, which was drilled below 12,000 feet and plugged back to 10,000 feet and completed. No. 1 tried to blow out below 12,000 feet when 30 feet of sand was encountered, but stuck drill pipe forced the plug back. The new test may be carried to the 12,000-foot sand.

At Chacahoula, Lafourche Parish, Sun Oil Company's Dibert, Stark & Brown 4, Section 70-15s-15e, missed the oil sand around 7500 feet and recovered salt water in the formation. At the end of the week the hole was bottomed at 7792 feet and was being straightened.

The Texas Company's Golden Meadows 1, a Golden Meadows, Lafourche Parish, was drilling in shale and lime at 9503 feet at the end of the week and is below the producing sand found in the discovery well.

At Lake Long and east of production, Fohs Oil Company's State Lake Long 7, Lafourche Parish, was preparing to make another test at 9818 feet after casing was perforated from 9815 to 9818 feet. A 17-minute drill stem test showed 4 joints of mud, no pressure and no oil.

### Eola Well Flowing 900 Barrels

Sid Richardson's Haas Investment Company 1, at Eola, Avoyelles Parish, is reported to have flowed 900 barrels daily through a 9/32-inch choke with a tubing pressure of 1450 pounds and a casing pressure of 1600 pounds. This well is producing from the Wilcox formation at 8550 feet. (See page 15.)

Tide Water Associated Oil Company is preparing to complete another well at Venice, Plaquemines Parish. Manhattan Fruit Company 9 is bottomed in oil sand at 5770 feet with 7-inch casing set. Top of the sand was cored at 5675 feet. A production test was being made over the week end.

Continental Oil Company's Standard of Kansas 1, north of St. Martinville, St. Martin Parish, was drilling in shale at 5560 feet at the end of the week. An electrical survey was made at 5410 feet and failed to show any oil sands.

Gulf Oil Corporation's State RR 4, Lake Borgne area, St. Bernard Parish, was drilling in sandy shale at 10,562 feet. At 10,444 feet a strong salt water flow was encountered and mud was weighted to 16 pounds before drilling was resumed.

In the Labadiville area, Assumption

## SOUTH LOUISIANA
## Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Bancroft—** | | |
| Republic Prod. Co., Columbia Land & Timber Co. 5 | 275 | 7340 |
| **Black Bayou—** | | |
| Shell, Watkins 42 | * | 4896 |
| **Charenton—** | | |
| St. Mary Oil Co., Hertel 3 | 200 | 1130 |
| **Creole—** | | |
| Superior, State 4 | 400 | 5150 |
| **Jennings—** | | |
| Glassell & Glassell, Trushel 7 | 515 | 7628 |
| Jolly Pet. Corp., McFallain 3 | 750 | 7288 |
| Port City Oil Co., Syndicate Fee 23 | 200 | 2761 |
| **North Crowley—** | | |
| Humble, Habetz 3 | 800 | 8748 |
| **Potash—** | | |
| Humble, Orleans Levee Board 37 | 552 | 8070 |
| **South Roanoke—** | | |
| Union Sulphur, T. R. S. Farms 2, dr to 10,954, pb and comp | 160 | 10177 |
| **Villa Platte—** | | |
| Continental, Pierre McDaniels 3 | 202 | 8970 |
| O. Pitre 2 | 144 | 9050 |
| **Vinton—** | | |
| C. A. Richardson, Vincent 1 | 75 | 2249 |
| **Acadia Parish—** | | |
| Tennard, Inc., Freeland 1, Churchpoint area, 64-7s-2e | * | 8502 |

* Failures; † Junked; ¶ Million cu. ft. gas.

Parish, Humble Oil & Refining Company's Milliken & Forwell 1, Section 15-14s-14e, was drilling in sand last week at 10,044 feet. The well was also in sand at 9970 feet.

The Texas Company's State Horseshoe Bayou 2 at Horseshoe Bayou, St. Mary Parish, was fishing in salt water sands at 12,777 feet last week after topping the sand at 12,770 feet. This is below the producing horizon found in the discovery well.

On the northwest flank of Jennings, Acadia Parish, Gulf Oil Corporation's Lamb Fee 1, Section 45-9s-2w, was abandoned at 7335 feet in shale after coring a sand showing oil from 7220 to 7230 feet. The sand was not saturated enough to make a test.

At Fausse Point, Iberia Parish, The Texas Company set 7⅝-inch casing in State 5 at 9992 feet after drilling to 10,010 feet. The hole was down to 10,145 feet at the end of the week.

On the flank of East Hackberry, Cameron Parish, The Texas Company completed two wells last week. State 16 was drilled to 8201 feet in salt, topped at 8200 feet. Seven-inch casing was set at 7950 feet and perforated at 7920 feet, flowing 3,500,000 cubic feet of gas daily through a 3/16-inch choke. State 24-B, which discovered a new sand some time ago and which has been shut down waiting on pumping equipment, was completed making 140 barrels of 31.2-gravity oil daily when casing was perforated at 7775 feet.

Superior Oil Company's Nunes 1, north of production out in the Gulf of Mexico off Cameron Parish, was shut down at 7490 feet awaiting orders. Operators will probably abandon the well, as no good showings of oil were encountered.

# North Louisiana Fields

***Cotton Valley Lower Marine well flows 504 barrels initial. Two tests in Shreveport area nearing completion stage.***

**Shreveport.**—The seventh oil producer from the lower Marine and the fourth from the "D" horizon of that series was completed last week at Cotton Valley, Webster Parish, in Oliphant Oil Company's Gray-Stephens 1, C SE SW 35-21n-10w. Depth is 8600 feet and 7-inch casing set at 8577 feet was perforated with 144 shots from 8397-8420 feet; elevation is 181 feet. The well flowed 504 barrels of 45.4-gravity oil in first 14 hours through ¼-inch tubing choke with 1825 pounds tubing pressure, and 2040 pounds on casing. Later the well gauged in 24 hours 868 barrels of oil, flowing through ¼-inch choke with tubing pressure 2100 pounds and casing pressure, 2675 pounds. This well is approximately one mile northeast of the nearest oil well in the "D" sand, but is on the southeast side of the field where oil production has been found in the "E" or Bodcaw sand of the lower Marine series. This well topped Travis Peak at 5882 feet, logged the Holloway sand at 5975-88 feet and logged the Bodcaw or "E" sand from 8488 to 8536 feet.

In the southeast end of the same field, Woodley Petroleum Company was preparing to test J. O. Couch 1, C NW SW 36-21n-10w, in the Bodcaw sand. Total depth is 8600 feet with seven-inch casing set at 8584 feet.

On the southwest flank of the field, Oliphant Oil Company abandoned E. L. Stewart B-2, C NW NW 4-20n-10w, at 9198 feet. With elevation of 248 feet this test failed to log any Holloway sand in the Travis Peak, topped the "D" sand at 8594 feet but it showed water; topped the Bodcaw (E) sand at 8684 feet and topped the Davis (F) sand at 8930 feet, the latter being tight and non-porous. Porous saturated sand was logged from 8697 to 8706 feet but a drill-stem test failed. Later it tested 155 barrels of distillate and 103 barrels of salt water in 24 hours, cored ahead, swabbed down with no shows and drilled and cored ahead to 9198 feet where a fruitless effort was made to test.

### Two Shreveport Tests Ready to Complete

Two tests in the Shreveport field, both offsetting producing wells, were waiting on final strings of casing to set before perforating and testing in Basal Glen Rose lime. These two tests are: Hurricane Petroleum Company's North 1, C SE NE 34-18-14, which logged three sections of saturation, the best from 5523 to 5537 feet, and other sections being 5542-49 feet and 5552-56 feet. Seven-inch casing was set on bottom at 5591 feet. The other test is Roy Kniverton's Kahn-North 1, C SE NW 35-18n-14w, total depth 5562 feet. It logged 19 feet of saturation. Four other tests are drilling in the field and C. D. Loe's Lionel Meyer 1, SW SE 33-18n-14w, southwest outpost is arranging to re-test again after another acid treatment. Old total depth is 5612 feet. No new locations were announced for the week.

One half mile north of Colonial Oil Corporation's recent 2½-mile north extension well of the Tokio horizon of the old Pine Island field near Vivian, Caddo Parish, L. H. Mahon's Henderson 1, SW SW 27-22n-16w, was underreaming preparatory to setting casing after logging top of Tokio sand at 2472 feet with 15 feet of saturation reported. Well flowed through drill stem after formation tester was open 4 minutes, with ¼-inch choke top and bottom, and it was immediately shut in after flow

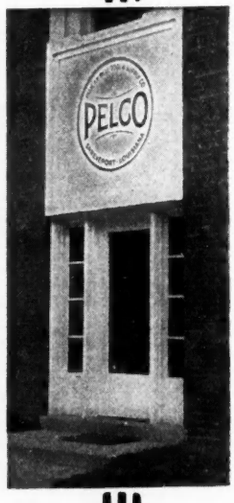
## NORTH LOUISIANA Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Webster Parish (Cotton Valley)—** | | |
| Oliphant Oil Corp., Gray-Stephens 1, 35-21n-10w | 868 | 8600 |
| E. L. Stewart B-2, 4-20n-10w.. | * | 9198 |

* Failures; † Junked; ¶ Million cu. ft. gas.


Better get it from PELCO!

We have some nice competitors. They favor us when they can, and vice versa. But for thirty years and more we have tried to conduct this business so that one oil man would say to another: "Better get it from PELCO." To that end we have been a bit selfish, no doubt, about acquiring the supply and equipment lines preferred by operators in our area. Of course they can still paddle along without us; some of them do. But the current flows the other way.




PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

Lake Charles—Houma—Converse
New Iberia—Monroe
Cotton Valley—Greggton
Magnolia—Houston

started. Colonial Oil Corporation's Thigpen-Herold 1, Section 34-22n-16w, the extension discovery, completed flowing 432 barrels daily, is now being standardized. An east offset to the latter well was spudded last week and 3 other locations in this area are to be staked within a few days under lease obligations.

Samuel S. Alexander is running 5½-inch casing to bottom at 3145 feet in Stell A-1, NE NE 5-12n-16w, DeSoto Parish, that showed some oil at 3046 feet in Paluxy, and will perforate casing at 3046 feet for a test. This test showed about two million cubic feet of gas and a little oil at 2705 feet.

E. T. Oakes was arranging to swab E. C. Kilgore 2, NW SE 28-21n-5w, 1½-miles northwest outpost at Lisbon at 5317 feet, after the well flowed several hours following acidization last week.

Sutton-Zwolle Oil Company, drilling its second Paluxy sand test at Blue Lake (West Zwolle), Sabine Parish, is planning drilling a series of Zwolle shallow chalk wells around Section 6-7n-13w, Sabine Parish, 3 miles northeast of nearest production in the Blue Lake district and 5 miles west of the town of Zwolle.

Arkansas Fuel Oil Company's Gayoso 2, C SW SE 14-16n-10w, Bienville Parish, after showing only 45 feet of mud in drill-stem test in the Travis Peak from 5796-5805 feet drilled ahead at 5919 feet in red shale. At Sibley, Union Producing Company's Walker Unit 1, C 30-18n-8w, Webster Parish, drilled at 7029 feet in Travis Peak. Magnolia Petroleum Company leased N½ SE 21-16n-9w, Bienville Parish, east of Lake Bisteneau. Near Hosston, Caddo Parish, O. G. Collins is leasing in township 22 north, range 15 west. Mid-States Oil Company is taking more leases at Haynesville, Claiborne Parish, latest acquisitions being in Section 27-23n-8w. D. J. Crawford is leasing in Sections 31 and 32-21n-7w, Claiborne Parish, on the southeast flank of the old shallow Homer field. East of Coushatta, Red River Parish, where it has recently been checking with a seismograph unit, Shell Petroleum Corporation is taking some leases in township 12 north, range 8 west.

Magnolia Petroleum Company's Branton 4, C NE 6-22n-9w, Webster Parish, Shongaloo district, drilled last week at 9122 feet with plans to halt at 9138 feet, run electrical log and if satisfactory set casing and core ahead for the expected saturated horizon of the lower Marine that produces gas-distillate at 8990-9010 feet in the same company's Sexton 1, Section 32-23n-9w. The same company's Roseberry Unit 1, C SE 29-23n-9w, drilled at 7535 feet in hard sand.

---

**Shreveport.**—Forty-one drilling permits were authorized last week by the Louisiana Conservation Commission. Fourteen were in North Louisiana among the following parishes: Bossier, 1; Caddo, 10; Sabine, 1; Union, 1; and Webster, 1. The 27 in South Louisiana were distributed among the following parishes: Acadia, 2; Beauregard, 1; Calcasieu, 1; Cameron, 2; East Baton Rouge, 2; Evangeline, 2; Iberia, 2; Iberville, 1; Jeff Davis, 1; LaFourche, 1; Plaquemines, 3; St. Martin, 3; and St. Mary 6.

# Arkansas Fields

## *Stephens test drills to no encouragement at 6000 feet*

**El Dorado, Ark.**—The first deep test for Stephens, Ouachita County, proved disappointing and may be abandoned at 6003 feet, present total depth. The operation is Deep Rock Oil Company and Tide Water Associated Oil Company's A. C. Wesson 1, NE SE SE 23-15-19, which is shut down after electrical log was run to bottom. Result of this survey will determine what operators will do. Contract depth is 6000 feet. After topping Cotton Valley lime at 4110 feet this test topped Permian lime at 5934 feet with some saturation but poor porosity and permeability was logged. In a core from 5969 to 5974 feet, 4 feet of porous, slightly granular, lime was recovered with slight saturation and poor porosity. In a core of the next 10 feet, recovery was 5 feet, 3 inches, with 6 inches of porous saturated lime, the next 1½ feet being porous lime with salty taste and sulphur odor, top of the water level being placed at 5980 feet.

Shell Petroleum Corporation and Ohio Oil Company's Warren 1, SE SE 13-16-24, LaFayette County wildcat, cored ahead after a core from 7328 to 7338 feet recovered only dense crystalline lime with no porosity, permeability or saturation. However, in a core from 7278 to 7305 feet of hard oolitic lime there was some saturation. The well had shown some oil and salt water when tested at 7220 feet, casing having been set at 7169 feet.

J. K. Wadley and associates' Taylor 1, C NE SW 15-19-26, LaFayette County, drilled at 6100 feet after the Gloyd horizon of the Glen Rose from 6060-80 feet showed a slight trace of oil.

Joe Zick and associates have assembled a 10,000-acre block for a 2500-foot test in Clark County, the block centering around Section 28-8s-18w.

Standard Oil Company plans to start a Permian lime test this month on the 6000-acre block it recently secured from J. E. Smitherman around Section 4-17-21, Columbia County. In townships 17 and 18, ranges 20 and 21, Phillips Petroleum Company continues to lease for a Permian lime test. Atlantic Refining Company is leasing in township 18, ranges 21 and 22; Mid-Continent Petroleum Company, in township 18, ranges 20 and 22; Lion Oil Refining Company, in township 17, range 22; all in Columbia County. This county continues to have considerable geophysical exploration, Atlantic Refining Company having a shooting unit in township 18, range 22; Phillips Petroleum Company having a similar unit in township 18, range 20; and Standard Oil Company having one in township 17, range 20 and another in township 18, range 21.

In LaFayette County, southwest of the village of McKamie, J. B. Greer continues to lease for a major oil company, in township 17, ranges 23 and 24, and north of McKamie, O. G. Collins is leasing in the upper part of township 17, range 23. Gulf Refining Company, H. L. Hunt, Lion Oil Refining Company, Standard Oil Company, and The Texas Company are actively leasing south of Lewisville and Stamps in townships 16 and 17, ranges 23 and 24 of the same county.

Northwest of El Dorado and northeast of Lisbon, Union County, Phillips Petroleum Company is leasing around Section 31-16-16, in an area where Gulf Refining Company and Standard Oil Company are already leasing. In the same county, Amerada Petroleum Corporation and Stanolind Oil & Gas Company have seismograph units working in townships 17 and 18, ranges 11 and 12. Phillips Petroleum Company and Lion Oil Refining Company, are leasing in Section 36-17-16.

East of New London, Union County, G. G. Nesbitt is leasing around Section 36-17-12 and around Section 1-18-12. Mid-Continent Petroleum Company is taking some leases in southeast part of township 17, range 12, and southeast of Hillsboro in the upper part of township 19, range 13. Phillips Petroleum Company is securing leases.

---

**El Dorado, Ark.**—Three drilling permits were authorized last week by the Arkansas Board of Conservation, as follows: Columbia County:. Atlantic Refining Company, Levi Garrett B-1, located 653 feet east and 659 feet south NWc NW 24-17-20; Miller County—Gerhig Company of Arkansas, Fred Watson 2, 330 south of NWc NE SE (on 40-acre line) 2-20-28; H. J. Mitchell 3, C N½ SE SW 2-20-28.

## *Southwest Mississippi getting new play*

**Jackson, Miss.**—Wilkinson County, extreme southwest Mississippi, is getting the bulk of the immediate "play" resulting from discovery of oil in the Sparta-Wilcox at Eola, Louisiana. Several firms have opened exploration headquarters at Woodville, the county seat. There is a heavy demand for logs of the 10 wells drilled in the last decade in this county. Barnsdall Oil Corporation, which has kept a reflection seismograph unit in this county for several months, is taking a block around

## ARKANSAS Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Miller County (Rodessa)—** | | |
| J. R. Frankel, Watson 1, 2-20-28 | 480 | 6210 |
| **Union County (Rainbow City-Champagnolle)—** | | |
| J. R. Lockhart, Purdue 1, 12-17-14 | • | 3970 |
| **Union County (Schuler)—** | | |
| C. H. Murphy et al, Fee 2, 13-18-18 | 600 | 7720 |

•Failures; †Junked; ¶Million cu. ft. gas.

## SOUTHEASTERN STATES Completions

**ALABAMA**

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Greene County (Wildcat)—** | | |
| R. T. Jeffrey et al, R. C. Lett 2, 3-20n-2e | • | 720 |

**MISSISSIPPI**

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Yalabousha County (Wildcat)—** | | |
| Chas. W. Crader, Jno. Bruce James 1, 24-11s-6w | • | 3195 |

•Failures; †Junked; ¶Million cu. ft. gas.

Section 38-2n-3w, where Danciger Oil & Refining Company drilled a test in 1936.

Sun Oil Company has a torsion balance unit working "in the trend" in Perry and Lincoln counties.

Clint Vinson, B. J. Carter, and Clarke Pearce, Trustees, have taken over controlling interest in Jerimiah L. Ryan's block and test, Eddins 1, SW SW 29-2n-14e, Clarke County, and will deepen from 300 feet. Ryan retains an interest and the test will continue in his name.

Charles W. Crader has abandoned James 1, NE NE 24-11s-6w, Yalabousha County, north Mississippi, in basal Tuscaloosa, in rock and chert at 3195 feet. With elevation of 367 feet this test topped Tuscaloosa at 3050 feet.

### *Southeast Alabama test reaming to go deeper*

**Mobile, Ala.**—H. A. Stebbinger's Mrs. Alyce Robertson 1, NE NE 19-10n-26e, Barbour County, southeast Alabama, is reaming out 9⅞-inch hole to bottom at 4315 feet in black shale and sand from 4065 feet, preparatory to drill ahead. It is a 6000-foot test, and operators report a slight oil showing on the ditch at top of the Tuscaloosa at 2200 feet. Elevation is 555 feet.

J. C. Prine's King 2, NE NE 4-1n-4w, Mobile County, has plugged back from 1160 feet in sand to 930 feet, set 7-inch casing and may perforate for a test.

In the Everglades of Florida, Peninsular Oil & Refining Company's J. W. Cory 1, C NW 6-55s-34e, located 41 miles west of Miami, is arranging to resume at 810 feet in shale, after being shut down for repairs. In Nassau County, Florida, St. Mary's River Oil Corporation's Hilliard Turpentine 1, NW NW SE 19-4n-24e, is shut down at 4342 feet in shale. In Levy County, Florida Oil Discovery Company's Sholtz 2, SW SW NE 9-15s-13e, is drilling hard sand at 4340 feet. In Suwannee County, J. W. Phillips Oil Exploration's Shilkett 1, NW NW 14-4s-14e, is shut down at 320 feet.

### *Petroleum study courses in Los Angeles announced*

The University of California extension division announces the opening of a course in Petroleum Technology on Wednesday evening, March 8, at 7 o'clock at its 815 South Hill Street downtown Los Angeles headquarters. The course will stress the history, origin, geology and chemistry of petroleum and will include laboratory tests and a study of transportation and distribution, as well as other pertinent topics. The course will consist of 15 weekly meetings and will be followed by a second course of an equal number of meetings starting on May 17. The courses are open to everyone interested and will have as instructor Paul F. Devine, assistant supervisor in charge of sciences and mathematics for Los Angeles city schools.

An advanced course in Practical Oil Geology with William W. Porter II, consulting geologist, as instructor will open at the state university's extension division headquarters in Los Angeles, Tuesday evening, March 14.

# New Mexico Fields

***Third completion at Lovington is area's best producer. Vacuum field operators studying gas repressuring plan.***

**Hobbs, New Mexico.**—The third oil completion in the Lovington pool, Lea County, is showing for the largest producer, and creates 3 more offsets to be drilled. Production was expanded to the east when the Repollo Oil Company's State 1-182, SW SE SW 31-16s-37e, flowed 260 barrels of pipe line oil in 9½ hours through ¾-inch tubing choke after using 2500 gallons of acid in broken pay at 4611-4760 feet. It is a mile southeast of the discovery, and 1-1/3 miles northeast of the second oil well.

The area gained a new test last week when Stanolind Oil & Gas Company located State 2, C SE NW 1-17s-36e, half mile north of production. The completed oil wells are producing their proration allowable of 48 barrels daily. Tank trucks are used to make deliveries to pipe lines at Hobbs. This drainage will require the drilling of all offsets within a short period.

Proposal advanced late last year by operators in the Vacuum field to install a cooperative gas repressuring system has been passed on by committee engineers, and a geological committee is now studying the plan. The saturated lime horizon yields less free gas than any other important oil field in the county. The reservoir pressure has shown a tendency to decline sharply, resulting in comparatively new wells going on pump. Phillips Petroleum Company and Continental Oil Company have taken the initiative in the repressuring project, which would be followed by the laying of a natural gas line from the Monument-Eunice district. One large lease owner is reputed to be opposed to the plan.

New activity in Lea County remained at a normal level the past week when 5 areas accounted for 10 new tests. The lone operation by the independent group consisted of the Two States Oil Company's State-Gulf 4, C SW NW 16-22s-37e, near mid-section of the Penrose field.

Continental Oil Company started operations on 4 new projects. The company's State 1-A-F-1, C W½ SE NE 1-22s-35e, is seeking a minor extension for the southwest portion of the Eunice field. State 5-E-17, C W½ NW SW 17-22s-36e, is also near the southwest edge of the field. In the Mattix area, Continental Oil Company and its three partners on federal permit development have derrick up for E. E. Jack 4-A-20, C SW NE 20-24s-37e, and Jack 2-B-27, C SW NE 27-24s-37e.

Shell Petroleum Corporation's State 1-C, C NE SE 24-17s-34e, an inside location in the north portion of the Vacuum field, yielded several gallons of free oil when swabbed down through tubing, with the hole bottomed at 4733 feet. The tight lime section was due to be given a 300-quart nitro shot last mid-week. Humble Oil & Refining Company's State 2-J, an east offset, was drilled to 4765 feet, and flowed 50 barrels oil in 2 hours on preliminary test.

Three additional tests for the Vacuum field have been authorized by Phillips Petroleum Company in trying to keep abreast of offsets. The company's State-Santa Fe 24, C NE NE 34-17s-35e, and State-Santa Fe 26, C NE SW 29-17s-35e, have derricks up, while State-Santa Fe 25, C NW SE 30-17s-35e, was drilling in the salt section. Magnolia Petroleum Company's State-Bridges 25, C NE SE 26-17s-34e, a recent authorization, was drilling at 2800 feet. The latter is operating 5 rigs in the Vacuum area.

Shallow gas production for the Maljamar field, western Lea County, was attained by the Maljamar Oil & Gas Corporation's Baish 1-B, C NE NW 22-17s-32e, several locations east of its discovery oil well. This test failed to produce from the deep lime in drilling to 4127 feet, and was plugged back to 3527 feet. The well tested 2,000,000 feet of gas after 120-quart nitro shot in gas sand at 3080-3120 feet.

Operations were resumed the past week on Shell Petroleum Corporation's Harwood 1, C S½ SE SE 27-7s-35e, structurally high wildcat on the Milnesand prospect, Roosevelt County, and the test was drilling lime formation at 5195 feet. It is reported that it will be carried to the 8000-foot level. Harwood 1 was originally drilled to 5151 feet last December, and tested sulphur water when plugged back at intervals to 4290 feet.

## NEW MEXICO Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Eddy County—** | | |
| Fullerton Oil Co., Johnson 4-A, c sw nw 35-16s-31e | 64 | 3950 |
| Rhodes Drl. Co., Swearingan 1, ne se nw 14-18s-31e | 73 | 3473 |
| **Lea County (Eunice)—** | | |
| Cities Service, State 1-M, c sw sw 36-21s-36e | 400 | 3840 |
| **Lea County (Langlie)—** | | |
| Italo Pet. Corp., Indian Pet. 1-B-6, ne ne ne 6-25s-37e | 408 | 3519 |
| Phillips-Pure, Woolworth 4, c nw se 33-24s-37e | 3156 | 3491 |
| **Lea County (Lovington)—** | | |
| Stanolind, State 1, c sw se 1-17s-36e | ¶6.8 | 4980 |
| **Lea County (Maljamar)—** | | |
| Maljamar O&G Corp., Baish 1-B, c ne nw 22-17s-32e | ¶2 | 4157 |
| **Lea County (Penrose)—** | | |
| Two States Oil Co., State-Gulf 3, c ne nw 16-22s-37e | 408 | 3700 |
| **Lea County (Vacuum)—** | | |
| Drilling & Explor. Co., State-Corona 1-B, c s½ se nw 22-17s-35e | * | 4690 |
| Magnolia, State-Bridges 22, c se sw 24-17s-34e | 144 | 4700 |
| Phillips Co., State-Santa Fe 22, c nw sw 26-17s-35e | 950 | 4528 |

*Failures; †Junked; ¶Million cu. ft. gas.

# Mountain States

## *Failure marks north end of Big Medicine Bow field*

**Casper, Wyo.** — Northern producing limits in the big Medicine Bow field, Carbon County, southern Wyoming, operated jointly by Ohio Oil Company and The California Company, have been defined by Union Pacific-Johnson 7, CSNE SW 23-21n-79w. Drilled to 5836 feet in the lower Sundance sand, with no oil or gas shows reported in either bench of the Sundance formation, hole is being plugged back to test for possible production in the Dakota horizon.

Wyoming Petroleum Corporation has succeeded in killing the gas flow in Budd 1, C NE NE 10-29n-113w, wildcat test on the Big Piney structure, Sublette County, in Western Wyoming, which ran wild for over 2 months at an average rate in excess of 20,000,000 cubic feet daily. It has been mudded in and work of removing ice from the rig to permit operations to resume is under way. Casing will be run to bottom at 1695 feet to shut off the gas flow and hole drilled ahead to test the Frontier formations.

Sinclair-Wyoming Oil Company reported Lost Soldier 81, SE NW 11-26n-90w, in the Lost Soldier field, Sweetwater County, southwestern Wyoming, swabbed 61 barrels of oil and 250 barrels of water on test at 2040 feet in the Sundance sand and has drilled ahead to 2043 feet with standard tools where it is testing further. Lost Soldier 82, NE SW SW 11-26n-90w, latest start in the same field, is drilling below 1134 feet headed for the Sundance sand at around 1900 feet.

Possibilities for a good well on the eastern edge of the Lance Creek field, in Niobrara County, eastern Wyoming, were seen in Ohio Oil Company's Leo OPC-16, NW NE SW 35-36n-65w, which is cleaning out after running tubing and will test production in the Leo sand formation at 5576 feet. Operators reported good saturation in the sand. Leo 1 OPC-7, NWc SE 35-36n-65w, eastern outpost location in the Lance Creek field, is scraping walls to full size to bottom at 5641 feet preparatory to deepening to test lower benches of the Minnelusa sand.

Hole has been deepened to 5636 feet in the southern extension well for the Lance Creek field, Adams Oil & Gas Company and Felmont Oil Corporation's Baker 1, NW NE SW 8-35n-65w, and tubing is being run to test further. A short test earlier in the week showed around 15 barrels daily natural. Argo Oil Corporation is swabbing and cleaning out Elliott 9, NWc NW SE 5-35n-65w, inside location in the field, which bottoms at 3968 feet in the Sundance production zone. This company is preparing to deepen Ford 3, CSL SW NW 33-36n-65w, an old Sundance producer in the field, to the Minnelusa sands. Present total depth of the well is 4045 feet where it completed in 1937 for 75 barrels daily.

Possible extension of the Dewey Dome field, in Weston County, northeastern Wyoming, a mile to the northwest is seen in reports from the Osage Trust Company and T. R. Ragland's 1, NW SW 31-42n-60w, which has run casing to the top of the Leo sand of the Minnelusa series and is drilling plug to test. It reported good saturation in the formation in which hole bottoms at around 2495 feet.

Despite colder weather, 3 wells remain active in the northern Wyoming district. Recent start in the Torchlight field, Big Horn County, Clifford S. Johnson's 1, CEL NW NW 24-51n-93w, is down 400 feet and drilling ahead. Southern extension test of the Oregon Basin field, in Park County, northwestern Wyoming, Dry Creek Oil Company's State 1, NE NW 16-50n-100w, is down 200 feet where operations are halted temporarily. In the Byron field, Big Horn County, Taylor Oil Company's Sheets-Government 1, SE NE SE 9-55n-96w, drilling as a southern extension test in the south Stern fault block of the field, is drilling below 2850 feet after cementing 8¼-inch casing at 2710 feet.

## MOUNTAIN STATES
### Completions

**MONTANA**

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Glacier County (Cut Bank Field)—** | | |
| Glacier Production Co., Neil 3, se se ne 20-33n-5w | 67 | 2980 |
| **Toole County (Kevin Sunburst Field)—** | | |
| Neptune Oil & Gas Co., Seabrook 7, nw nw sw 19-35n-2w | 35 | 1548 |
| Prevol & Shea, Government 1, s nw sw 11-35n-3w | 12 | 1790 |
| Fred Platt, Bell-Government 1, nw sw ne 9-34n-2w | * | 1487 |
| **WYOMING** | | |
| **Niobrara County (Lance Creek Field)—** | | |
| Continental Oil Co., Schuricht 7-B, nw nw se 6-35n-65w | 150 | 4010 |

*Failures; †Junked; ¶Million cu. ft. gas.

# Michigan Fields

## *Bay County deep test plan abandoned for shallow show*

**Mt. Pleasant, Mich.**—Gulf Refining Company last week sidetracked original plans for Sylvania-Trenton testing on Bateson 1, SE SE 2-14n-4e, Bay County, and quit drilling at 3755 feet to plug back and acidize a promising Monroe lime saturation zone at 3530-3550 feet. Operators expected to be ready to treat with 1000 gallons of acid late this week. Although the well already has produced between 250 and 300 barrels of crude from the 3530-50 foot Monroe pay, the best gauge appeared to be a 75-barrel recovery by flow in a 24-hour period after getting the hole completely cleaned out prior to the test. Two wells are producing from 5 to 20 barrels per day in Gulf's big Bay County block from the 2900-foot Dundee zone. This is the first shot at Monroe production in the area.

Drilling equipment for a 5000-7000-foot hole has been used on the test and 8-inch casing was set to 3120 feet. If acid does not jump production to a higher point it is likely that the plug will be knocked out and drilling continued.

Neither of two wildcats which made substantial oil shows in the Traverse limestone 10 days ago, indicating possible new pools, had been completed this week. Bell & Marks, Inc.'s Brower 1, NW SW NW 23-3n-12w, Allegan County, topped Traverse at 1631 feet and bottomed at 1633 feet after drilling 2 feet of saturated lime. Better than 200 barrels of oil was recovered the first 4 days by flow and swab. An attempt to acidize was made but the casing seat went out.

Carscallen and Anderson's Longnecker 1, SE SE SE 4-7n-13w, Ottawa County, is shut down at 1982 feet, 2 feet in Traverse lime, with a promising saturation zone. Some oil has been swabbed out.

Drilling programs are getting started in both the New Salem area, Allegan County, and the Walker area, Kent County, new districts opened late in 1938. Ten tests have been started or locations staked in the New Salem district, two miles northeast of the old Burnips Corners pool, first major pool opened in the 2-year old Southwestern Michigan boom. The discovery, Gordon & Victorys' Sutters 1, Section 11-4n-13w, initialed 110 barrels natural at 1625 feet in Traverse and jumped, last week, to 650 barrels per day with a 500-gallon acid treatment.

Socony-Vacuum Oil Company has started one test in the New Salem district and has staked three other locations. With the exception of work done last year by Gulf Refining Company, mostly core testing, this move into the shallow play marks the first drilling campaign for a major in Southwestern Michigan.

## MICHIGAN
### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Allegan County—** | | |
| Leighton Oil Co., Martin 1, nw nw se 9-2n-15w | * | 1472 |
| Smith & Gordons, Walters 1, se ne ne 28-4n-15w | * | 1690 |
| O. E. White, Lay 1, se nw ne 36-3n-13w | * | 1630 |
| **Clare County—** | | |
| C. W. Teater, Van Horn 3, sw nw ne 3-18n-6w | 1500 | 3866 |
| Huges & Hansens, Frackelton 1, ne ne ne 18-18n-5w | * | 3993 |
| Daily, Thomas & Rand 1, sw nw ne 28-20n-6w | * | 3912 |
| **Huron County—** | | |
| Leonard Prospecting, Milling Co. 1, nw ne se 10-16n-15e | * | 4482 |
| **Mecosta County—** | | |
| Gulf, Stillwell 1, ne sw ne 20-15n-9w | * | 1350 |
| **Midland County—** | | |
| Sun, State B-16, sw sw se 27-16n-1w | * | 3962 |
| C. W. Teater, Kalmar 1, ne se se 35-16n-2w | * | 3830 |
| **Montcalm County—** | | |
| R. A. Whitehead, Lincoln 1, c sw nw 29-12n-5w | * | 1256 |
| **Muskegon County—** | | |
| West Mich., Weaver 1, c se 33-10n-14w | ¶½ | 1315 |
| **Ottawa County—** | | |
| D. E. Heasley, Cox 1, c n nw sw 24-6n-13w | * | 1925 |
| **Van Buren County—** | | |
| Bloomingdale Dev., Decker 1, se se se 7-1s-14w | 250 | 1220 |
| H. W. Leman, Foster 1, ne se nw 11-1s-15w | 40 | 1191 |
| Lacota Oil Co., Biedenkopf 1, nw sw se 2-1s-16w | * | 1300 |

*Failures; †Junked; ¶Million cu. ft. gas.

# California Fields

***Outposts planned to define East Coalinga field***

***Continental to drill southeast of Aliso discovery.***

**Los Angeles.**—Development of the East Coalinga Eocene pool, Fresno County, has reached the stage where the principal operating companies are planning to drill outposts to determine the productive limits of this San Joaquin Valley field.

Superior Oil Company is preparing to drill a northerly outpost test 1000 feet north of Cagle 1, recently completed in Section 6-20-16 and judged the largest well in the field. Following up this completion Superior spudded Coalinga Fee 4, Section 20-7-16. Its Coalinga Fee 3, Section 7-20-16, has reached 6400 feet, Kreyenhagen shale.

Robert S. Lytle, operating the Petroleum Securities Company's properties, completed another substantial producer last week when No. 71-18-F, Section 18-20-16, was brought in for 4100 barrels of 32.5 gravity clean oil from 8034 feet. It will be choked in to conform to curtailment requirements.

Three-quarters of a mile south and a little to the west of Superior's Cagle 1 in this same area, Lytle, operator, brought in No. 37-7-F below 7700 feet with 502 feet of oil sand open for production. Officials declined to estimate its potential, stating that it approximated other wells in that area. This producer is two locations east and two north from Gatchell 2, discovery well.

In the San Joaquin Valley Amerada Petroleum is drilling two wildcats. At Blackwell's Corners the company is drilling its sixth exploratory hole in brown shale at 3015 feet, with the intention of proceeding to 5000 feet. Four miles northeast of Superior Oil Company's Cagle 1, producer in Coalinga Nose field, Amerada is drilling past 4688 feet in S.P.L. 7-17. Protecting their 105-acre lease The Texas Company has spudded Exeter Fee 1 on Section 6 as an offset to Superior's Cagle 1 well at Coalinga Nose. This well, a northeasterly outpost for the field, is 1300 feet east of Superior's producer. Holly Development Company which holds 40 acres north of the discovery well has no intention of offsetting for several months, according to field reports.

Following the discovery of the Aliso Canyon oil field in the Los Angeles Basin several months ago by the Tide Water Associated Oil Company's Porter 1, Continental Oil Company has entered the play with the acquisition of several parcels in SE SW Section 35-3-16. It has picked a site for the initial well on Lot 4 on the Sunshine Ranch, 1¼ miles southeast of the Porter 1.

The Texas Company has decided to deepen A-13-1, wildcat west of Anaheim, Section 8-4-10, despite tests revealing 3700 feet of salt water from the drill pipe. Showings in this well are very similar to those encountered in the Shell Oil Company's Harbeson, Mathis, and Weisel wildcats, all of which encountered oil showings and gray sand showing either oil or water cut, but nothing of commercial importance.

Hall-Baker, Inc.'s semi-wildcat, Williams Permit 1, Section 2-30-21, McKittrick, Kern, after deepening to 2493 feet and finding Franco-Western zone barren gray shale, has been plugged back to 1330 feet. The well will be recompleted from the zone between 1280 feet and 1330 feet. Completion from this zone last December obtained a flow of 1,500,000 cubic feet of dry gas with salt water believed to have been coming from just above plug which was then set at 1345 feet.

In West Montebello, Los Angeles Basin, McVicar & Rood are moving equipment from Manz 3 to Manz 1. Manz 1, completed May 15, 1938, from upper zone flowing 2500 barrels per day, will be deepened to 5785 feet, the Masser zone. Manz 3 has been recompleted from both zones, with a total depth of 6682 feet. Production is 375 barrels per day, 37 gravity, 0.9 percent cut. It has an estimated potential of 2100 barrels per day. Union Oil Company's Calkins 1, following a series of formation tests of the Seventh zone, is being reamed to bottom, 7160 feet. Liner will be run for production tests of the Masser zone and lower Seventh zone. Howard & Smith 4, northeast of Beverly and Maple, was completed at 6680 feet, flowing .33 barrels per hour, 37 gravity, cutting 2.4 percent. Production is 606 barrels per day, 37.2 gravity, 1.2 percent cut. La Merced 30, bottomed at 5685 feet, failed to flow. Recoveries showed 270 feet of oily gas-cut mud, 180 feet of oily water and mud, and 1362 feet of salt water. Operators are preparing to core ahead. Olympic Refining Company's Smith Community 1, bottomed at 7137 feet with 150 feet of perforation landed at 7132 feet, tested wet, necessitating another squeeze job.

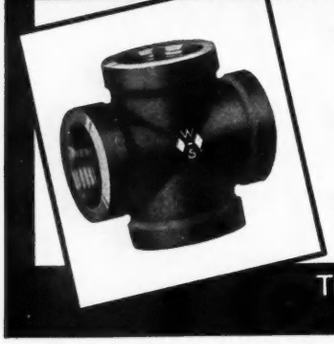
Ridge Oil Company has taken over Seacliff Petroleum's semi-wildcat on the Montebello golf course, northwest of the proven area, and will resume operations by setting surface casing. Depth of this hole is 728 feet.

## CALIFORNIA
### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Los Angeles County—** | | |
| W. E. Entrikin, No. "D"-1, sec 7-3-13 | • | 6520 |
| Hydro-Carbon Products Co., Duchess 1, nwc lot 2, Gardena Heights Tr. | 900 | 7815 |
| McVicar & Rood, Manz 3, 850 ft n on e line Maple Ave., from n line Beverly Blvd, thence 150 ft e at R/A | 750 | 6682 |
| C. H. Lebow, Lebow Fee 1, 180 ft s and 270 ft e of sec 236th St. and Eshelman | 725 | 5168 |
| Standard, Marble 1-2, 1600 ft w on the n line Marble 2 lease from nec, thence 230 ft s at R/A | 1143 | 4961 |
| West Side Oil Co., No. 3, 200 ft n and 500 ft e of C/Ls 235th St. and Eshelman | 100 | 5139 |
| **Kern County—** | | |
| Union, Kernco 7-34, sec 34-28-25 | 320 | 11379 |
| **Kings County—** | | |
| K.N.D.A., No. 36-22Q, sec 22-22-18 | 43 | 7460 |
| **Fresno County—** | | |
| Robert S. Lytle, No. 37-7F, sec 7-20-16 | 4032 | 7401 |
| Superior, Cagle 1, sec 6-20-16 (w) | 3200 | 7711 |
| **Ventura County—** | | |
| The Texas Co., Shiells 136, sec 4-3-19 | 167 | 3070 |

•Failures; †Junked; ¶Million cu. ft. gas.


**W-S FORGED STEEL FITTINGS**



- ***On pipe lines carrying oil or gas at high pressures or temperatures, use W-S Forged Steel Fittings.***
- ***Having a uniform factor of safety, W-S Fittings can be relied on for longer and more dependable service.***
- ***Write for complete information or get in touch with your supply house.***

THE WATSON-STILLMAN COMPANY
ROSELLE, NEW JERSEY


### *Report gives Kettleman Hills 50 more years to go*

A life-span of at least 50 years more, with careful management, is seen for the Kettleman Hills North Dome field in California by the United States Geological Survey in a report prepared February 2 for submission to the fourth annual conference of the conservation branch of the Geological Survey, opening that day at Salt Lake City.

The second largest oil, gas and gasoline field in the United States in volume of reserves, the Kettleman Dome area in the past 10 years has produced approximately 200,000,000 barrels of oil, 1,250,000,000,000 cubic feet of gas and 1,750,000,000 gallons of natural gasoline, it was stated. Sixty-nine wells have produced over 1,000,000 barrels of oil each, with one well reaching a total of over 6,000,000 barrels.

Federal revenues from this production have included $12,587,077 for oil, $2,803,944 for gas and $996,837 for gasoline. In one month—November, 1937—$295,895 was collected in royalties.

"The management responsibility for the estimated life span of this great

oil-producing area lies largely with the federal government which, in cooperation with the operators, regulates field activities under a unit plan of development and operation," the Survey report explained. The problems involved in leasing and operating regulations for the field, as well as for other mineral-producing lands, will be the subject of consideration at the Salt Lake City meeting.

"During the entire productive life of the Kettleman Dome field it has been subject to federally encouraged curtailment in one form or another," the report stated. "With a potential production rating of one third to one fifth of the state, the allowable has been, on an average, about one tenth of the state. At one time the field supplied over one half of the gas to the utilities of the state, but due to new discoveries in other fields, the gas deliveries have been cut about 30 to 35 percent. With this cutback the operators have curtailed the high gas/oil ratio production, thus conserving the gas energy for greater oil recovery.

"Since April, 1931, almost the entire field has been operated in conformity with the unit agreement approved by the Department of the Interior, under the direct supervision of the conservation branch of the Geological Survey, providing for spacing of the wells and more orderly development. The anticipated effect of unit operation will be increased production of one fourth to one half billion barrels, or about 25 percent of what the field might otherwise be expected to produce.

"Supervisory work in the field has been handicapped by drilling and producing practices of so-called outside operators, who are not parties to the agreement but who control 4 percent of the productive acreage and to date have recovered 19 percent of the oil produced from the field. Their rate of recovery has been based on the law of capture rather than on the principle of conservation and ultimate recovery."

Development of the Kettleman Hills field proved a theory voiced before the turn of the century in a Geological Survey report of 1898, in which it was predicted oil would be found. The area was declared a petroleum reserve as a result of the report, but the discovery well did not come in until October, 1928.

The field has been the subject of extensive litigation, so far costing the parties concerned approximately $1,500,000, the report commented.

## *Kiowa lease sale*

**Anadarko, Okla.**—Sale of 69 tracts involving 8727 acres of restricted lands of the Kiowa Indian tribe will be held here February 24. The listing includes 1 tract in Cotton County, 10 tracts in Comanche County, 36 tracts in Caddo County and 22 tracts in Kiowa County. Sealed bids will be opened at the agency of the tribe at 10 o'clock the morning of the sale.

## *Students to compete at Houston Oil Show*

As a means of furthering the education of petroleum engineering students, a program of student papers has been arranged for presentation at the Oil-World Exposition which will be held in Houston, Texas, from April 24 to 29, inclusive. The Exposition management is providing cash prizes for the best papers read at this meeting which will take place in the Convention Hall of the Coliseum on the evening of Wednesday, April 26.

The Student Program will be under the supervision of a Sub-Committee of the Drilling and Production Committee and consists of Professors Howard E. Degler, University of Texas, chairman; Benjamin C. Craft, Louisiana State University; J. H. Pound, Rice Institute; Harry H. Power, University of Texas; and Harold Vance, Texas A. & M. College. The universities and colleges of Oklahoma, Texas, New Mexico and Louisiana having courses in petroleum engineering subjects have been invited to participate in the contest and two students from each school will be selected to present papers. The speakers will be under-graduate students of the petroleum, chemical and mechanical engineering departments and the papers must be acceptable to the committee as being along the lines of oil production, refining or uses of petroleum products.

**HOWARD E. DEGLER**
**Chairman of Students Program Committee**

There will be eight prizes consisting of $100, $75, $50, $25, $20, $15, $10 and $5. The papers will be presented and graded in accordance with the new American Society Mechanical Engineers scoring sheet and the time limit of presentation will be fifteen minutes each with five minutes allowed for discussion and questions from the floor. Preliminary contests will be conducted at each school in order to decide the speaker selected and the subject of his paper.

# LETTERS TO THE EDITOR

GENTLEMEN:

This office has been endeavoring to keep a statistical record of all wells drilled below 7000 feet west of the Mississippi River. We have been obtaining this information for the state of California from the completion list published by you in THE OIL WEEKLY.

Since the first of the year, however, you have revised this list so that it is now no longer of value to us for the above purpose, as it now tabulates merely a summary of California completions rather than itemizing the actual completion.

We would greatly appreciate your returning to your former system of listing individual well completions rather than your present one. If this is not feasible, would you be kind enough to furnish us with the necessary information at regular intervals so that we may continue our own statistical studies.

E. P. SALISBURY
*Standard Oil Company of New Jersey,*
*New York, N. Y.*

GENTLEMEN:

Yours of January 25, advising that THE OIL WEEKLY would shortly resume its former method of reporting well completions, is greatly appreciated, and with this assurance, I am enclosing renewal of my subscription.

While this feature has more value to me than to others, I believe you will find that it will be appreciated by other operators who have not the means of keeping up with the different areas in which they have interest. The preservation of this information is, more or less, a hobby with me, as I have in my office, complete by years, "Completions," "Wildcats," and "Permits," as long as they were published, extending back to the last half of 1919. The information, thus preserved, has proved very valuable in "getting a start" in obtaining logs, operators names, etc., during a time when records were not very important. It is not of such current value, of course, but I have found it well worth the trouble.

A. C. PARKS
*Oil producer,*
*Wichita Falls, Texas.*

GENTLEMEN:

I have been disappointed to notice in your recent issues of THE OIL WEEKLY that lists of well completions during the preceding week are not arranged as they previously were. Formerly, the operator, the lease, the field, the depth well, and the initial production were all noted.

I have always considered this a valuable feature of THE OIL WEEKLY and hate to see it changed. I hope and believe that enough other people feel the same way about it so that the old form can return.

Let us say, "Ring out the new, ring in the old."

B. H. PALAMOUNTAIN
*O-C-S Manufacturing Company*
*Houston, Texas*

# WILDCAT REPORT
## New Starts and Completions

| STATE | WILDCATS STARTED | | WILDCAT TESTS COMPLETED | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | | Oil | | Gas | | Dry | |
| | This Week | This Year | This Week | This Year | This Week | This Year | This Week | This Year | This Week | This Year |
| Alabama | ... | 1 | 1 | 1 | ... | ... | ... | ... | 1 | 1 |
| Arkansas | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| California | 2 | 31 | 1 | 13 | 1 | 7 | ... | ... | ... | 6 |
| Illinois | 10 | 39 | 6 | 13 | 1 | 2 | ... | ... | 5 | 11 |
| Indiana | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... |
| Kansas | 4 | 19 | ... | 12 | ... | 5 | ... | ... | ... | 7 |
| Kentucky | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Louisiana | ... | 15 | 1 | 10 | ... | 2 | ... | ... | 1 | 8 |
| North Louisiana | ... | 5 | ... | 3 | ... | ... | ... | ... | ... | 3 |
| South Louisiana | ... | 10 | 1 | 7 | ... | 2 | ... | ... | 1 | 5 |
| Michigan | 3 | 16 | 7 | 22 | ... | ... | ... | ... | 7 | 22 |
| Mississippi | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 | 1 |
| New Mexico | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... |
| New York | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... |
| Oklahoma | 3 | 17 | 1 | 16 | ... | 2 | ... | 1 | 1 | 13 |
| Ohio | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 |
| Texas | 18 | 87 | 21 | 80 | 4 | 9 | ... | 1 | 17 | 70 |
| East Texas | 1 | 7 | 2 | 7 | ... | ... | ... | ... | 2 | 7 |
| North Texas | ... | 1 | 5 | 16 | 3 | 6 | ... | 1 | 2 | 9 |
| Gulf Coast | 1 | 13 | 1 | 7 | ... | 1 | ... | ... | 1 | 6 |
| Panhandle | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| South Texas | 8 | 43 | 12 | 40 | 1 | 2 | ... | ... | 11 | 38 |
| West Texas | 8 | 22 | 1 | 10 | ... | ... | ... | ... | 1 | 10 |
| Total U. S. | 41 | 232 | 39 | 171 | 6 | 28 | ... | 3 | 33 | 140 |

### ALABAMA

**Greene County**—R. T. Jeffrey et al, R. C. Lett 2, 3-20n-2e (120 ft e Willis & Payne's R. C. Lett 1), abnd 720 ft.

### ARKANSAS

#### FIRST REPORTS

**Lawrence County**—Gordon Crenshaw, Croom 1, c se 30-15s-2w, moving in materials.

### CALIFORNIA

#### FIRST REPORTS

**Kern County**—Richfield Oil Corp.'s Western B-14-3, 330 ft n and 330 ft e w¼c 3-31-25, lcn.

Union Oil Co.'s Kernco 1-36, 1320 ft n and 660 ft e swc 36-27-24, lcn. (Joint with Tide Water Associated Oil Co., Seaboard Oil Corp. and Continental Oil Co.)

#### COMPLETIONS

**Fresno County**—Superior Oil Corp.'s Cagle 1, 330 ft n and 330 ft w s¼c 6-20-16, elev 708 ft, 3200 bbls, top Gatchell sand 7120 ft, base oil sand 7696 ft, td 7711 ft, shut in.

### ILLINOIS

#### FIRST REPORTS

**Champaign County** — Sydney Oil & Gas Co.'s Wendling 1, se ne se 10-17n-10e, Raymond tnp, south of Sydney, dr 600 ft, late report.

**Christian County**—Oil Development Co.'s Post 1, se sw nw 1-14n-1w, dk.

**Jasper County**—Robey Drilling Co. & Dr. O. C. Borah's O. L. Whalen's 1, sw sw sw 24-8n-9e, 1 mi nw of Rose Hill, loc.

**Jefferson County**—Anderson et al's Peoples 1, sw sw ne 14-1s-1e, dr. Palacine Oil Co.'s Ireland Steel Co. 1, c se ne 29-4s-2e, moving in materials.

**Massac County**—C. M. Barnes & Roy L. Webb's McGhee 1, nec 3-16s-5e, near Metropolis, rig.

**Randolph County**—Dr. G. R. Sewards et al's H. Rehemer 1, se ne 19-4s-7w, Red Bud tnp, dr.

**Tazewell County**—Hopedale Oil & Gas Co.'s Litwiller 1, c sw sw 2-22n-3w, Boynton tnp, sd 2310 ft, late report.

**Wabash County** — Taylor Drilling Co.'s Schafer 1, sw sw se 28-1n-12w, dk.

**Washington County**—Hutchins' Weihe 1, sw se 35-2s-3w, Nashville tnp, 2 mi south of Nashville, dr.

**Wayne County**—Ivan Allen's Horton 1, se se se 13-13s-9e, Leech tnp, sd with surface pipe set.

#### COMPLETIONS

**Coles County**—Kingwood Oil Co.'s Tiven 1, c sw ne se 30-13n-8e, abnd 3399 ft.

**Cumberland County**—O. J. Marshall's Baker 1, ne ne sw 7-9n-7e, Spring Point tnp, top McClosky 2390 ft, abnd 2485 ft.

**Effingham County**—Gassman et al's Wm. Wagner 1, ne ne se 13-7n-5e, Jackson tnp, top St. Louis 2544 ft, abnd 2690 ft.

**Randolph County**—Leon Beattie (Cain) et al's Smiley 1, ne se ne 31-4s-5w, Sparta tnp, top St. Louis 1207 ft, abnd 1251 ft.

**Wayne County** — New Penn Development Corp.'s J. L. Wagner 1, nw sw ne 30-2s-9e, Leech tnp, 3 mi from production, swabbed 240 barrels, td 3445 ft.

**White County**—Pyramid Petroleum Corp.'s Gilbert Wode 1, se se ne, Indian Creek tnp, 3 mi ne Norris City, abnd 3000 ft.

### KANSAS

#### FIRST REPORTS

**Barber County**—Olson Oil Co.'s Coffman 1, nwc ne 25-31-12w, lcn.

Barbara Oil & Gas Co.'s Wilson 1, c se¼ 17-33-13w, rigging rotary.

**Barton County**—Central Petroleum & Vernon Oil & Gas Co.'s Miller 1, se sw se 17-16-13w, moving in materials.

**Stafford County**—Continental Oil Co.'s Maggie Russell 1, swc ne 13-25-13w, moving in materials.

### SOUTH LOUISIANA

#### COMPLETIONS

**Acadia**—Tennark, Inc.'s C. J. Freeland 1, Churchpoint area, 64-7s-2e, Discorbis 7314 ft, Large Discorbis 7439 ft, Heterostegina 7560 ft, abnd 8502 ft.

### MICHIGAN

#### FIRST REPORTS

**Allegan County**—Weller & Thomas' Bakker 1, 25-4n-12w, machine.

**Barry County**—Monroe's Siegler 1, 19-3n-8w, rig.

**Kent County**—Dooley's Niemeyer 1, 10-5n-10w, machine.

**Missaukee County**—Freeman Oil Co.'s Schut 1, 4-21n-4w, rig.

#### COMPLETIONS

**Allegan County**—Leighton Oil & Gas Co.'s Martin 1, nw nw se 9-2n-15w, Traverse lime dry, td 1472 ft. Smith & Gordons' Welters 1, se ne ne 28-4n-15w, abnd 1690 ft. O. E. White's Lay 1, se nw ne 36-3n-13w, top Traverse 1580 ft, abnd 1630 ft.

**Clare County**—Huges & Hansens' Frackelton 1, ne ne ne 18-18n-5w, Dundee 3963 ft, sw 3990 ft, abnd 3993 ft. Daily Crude Oil Co.'s Thomas & Rand 1, sw nw ne 28-20n-6w, Monroe 3819 ft, so 3829 ft, water 3900 ft, abnd 3912 ft.

**Huron County**—Leonard Prospecting Co.'s Milling Co. 1, nw ne se 10-16n-15e, Dundee 1927 ft, Monroe 2225 ft, abnd 4482 ft.

**Midland County**—C. W. Teater's Kalmar 1, se se se 35-16n-2w, Dundee 3729 ft, abnd 3830 ft.

**Ottawa County**—D. E. Heasley's Cox 1, c n½ nw sw 24-6n-13w, Traverse 1912 ft, water 1924 ft, abnd 1925 ft.

### MISSISSIPPI

#### COMPLETIONS

**Yalabousha County** — Charles W. Crader, Jno. Bruce James 1, 990 ft s and w nec 24-11s-6w, elev 398 ft, top Midway 910 ft, top calcareous Midway 1529 ft, top Cretaceous 1550 ft, Ripley 1585-1950 ft, Selma chalk 1950-2462 ft, Eutaw 2462-3045 ft, top Tuscaloosa 3050 ft, abnd 3195 ft.

### OKLAHOMA

#### FIRST REPORTS

**Cleveland County** — English Drilling Co.'s Rice 1, c ne ne 3-10n-2w, dr.

**Hughes County**—Skelton et al's Gilmore 1, cn½ ne se 7-5n-9e, rigging rotary.

**Murray County**—Carter Oil Co.'s Vensonite 1, nw nw ne se 34-1s-2e, rigging rotary.

#### COMPLETIONS

**Garfield County** — Jones Associated Co.'s Wolfe Estate 1, se sw nw 13-22n-4w, Garber pool, top Layton 3758 ft, top second Simpson 4451 ft, top Arbuckle lime 4595 ft, abnd 5626 ft.

### WEST TEXAS

#### FIRST REPORTS

**Concho County**—Claremore Oil Co.'s T. Y. Hill 1, c ne sec 1694 ft, abst. 197, dr 90 ft.

**Irion County**—Moore Exploration Co., Inc.'s Tippett-Wardlaw-Conoco 1, 3905 ft fr s and 990 ft fr w lines of R. Rodriguez sur No. 1803, dr 150 ft.

**Jones County**—Buffalo Oil Co.'s H. Wood 1, 330 ft out of nec T&P sec 53, blk 15, machine. Gillespie, Fain-McGaha Oil Corp.'s W.


# OIL BOOKS

The knowledge gained through years of work and study by some of the most capable men in the oil industry is set down in the various oil books published and sold by the Gulf Publishing Company. Catalog of these books furnished upon request.

**THE GULF PUBLISHING COMPANY**
**P. O. BOX 2811** **HOUSTON, TEXAS**

H. McKeever 1, sw ne nw sec 54, Orphan Asylum Lands, lcn. Gregg Oil Co. et al's C. O. Appling 1, near sw nw sw BBB&C sec 32, dr 500 ft. S. B. Roberts Co. et al's L. A. Collier 1, ne ne se T&P sec 36, blk 15, machine.

**Pecos County**—J. L. Greene et al's Iowa Realty Co. 1, 150 ft out of s cor of n¼ H&GN sec 139, blk 10, dr 390 ft.

**Sutton County**—W. M. Holland and C. S. Leidecker's G. S. Allison 1, c se se GH&SA sec 44, blk K, cem sur cas.

### COMPLETIONS

**Pecos County**—J. R. Bell et al's Shearer-Gulf 1-C, 2490 ft fr nw and 1170 ft fr sw lines H&GN sec 111, blk 10, elev 2388 ft, top anhydrite 405 ft, salt series 814-904 ft, sul w 1992 ft and abd.

## TEXAS GULF COAST

### FIRST REPORTS

**Washington County**—Mt. Selman Oil Co.'s Fuelberg 1, ne of Brenham, 330 ft e and 330 ft s nec Pholmeyer 114-ac tract or a 146-acre tract in J. W. Lightfoot sur, lcn.

### COMPLETIONS

**Waller County**—Providence Oil Co.'s Muske 1, n of Brookshire, J. Perry sur, topped Cockfield 6126 ft, salt water sand 6371 ft, abnd 6618 ft.

## NORTH TEXAS

### COMPLETIONS

**Baylor County**—British American Oil Prod. Co.'s F. C. Green 1, c sw se T&NO sec 215, top Home Creek lime 2579 ft, oil pay 2580-2605 ft, pb fr w.s. 2631-35 ft, used 3000 gals acid, pumped 238 bbls oil and 129 bbls water 36 hrs.

**Cooke County**—Whitfield, Pearson & Grimes' B. Voth 2, 1650 ft fr n and 330 ft fr w lines of Z. D. Fulton sur A-1250, top Ellenberger 1785 ft, oil pay 1788-93 ft, pumped 302 bbls 40° oil and 75 bbls water 17 hrs.

**Grayson County**—Denver Prod. & Ref. Co.'s Cannon 3, 1325 ft fr e and 2465 ft fr s lines of E. Barnes sur, A-43 or se/ Cannon 1, abnd 2414 ft. C. E. Marshall et al's F. Christman 1, 330 ft fr s and 660 ft fr w lines of M. L. Ahalt sur A-1427 ft, o.s. 832-40 ft, pb fr 927 ft, pump 6 bbls 44.6° oil initial.

**Jack County**—N. Davies et al's K. D. Baker-Barnett 1, 330 ft fr s and 744 ft fr e lines TE&L Co. sec 2709 ft, abnd 2370 ft.

**Wichita County**—E. G. Boardman et al's J. Stevenson 1, 750 ft fr n and 150 ft fr w lines blk 56, Specht & McCutchen sub-div, abnd 1448 ft. Pois & Schultz's Ed. Foster 1-N, 500 ft fr s and 750 ft fr e lines of E. W. Cullum sur A-45, abnd 2104 ft.

## SOUTH TEXAS

### FIRST REPORTS

**Bexar County**—Fred Beatty, Adolph Joppich 1, 150 ft n line, 150 ft e line south-100-acres, lcn. Joe A. Noake, J. D. Oppenheimer 2, 150 ft w line, 2866 ft s line of 227-ac tr, William Miller survey, lcn.

**DeWitt County**—Sookey-Nick Oil Corporation, W. C. Steinmann Estate 1, from the se corner of Rudolph Lehmkul survey w along sl, 1697 ft, thence s 937 ft in Uriah Blue sur, lcn.

**Duval County**—Dan Auld, Pipe Dimmitt 1, 466 ft s line, 466 ft e line of nw quarter section 16, Copita Farm and Garden Tracts, Jose Marcello Hinojosa grant, lcn.

**Jim Wells County**—Jack Calvert et al, C. T. Hewitt 1, 466 ft s line, 466 ft e line of nw quarter section 45, R. P. Haldeman subd of Seeligson ranch, Richard Ross survey, lcn.

**Kenedy County**—Humble Oil & Refining Co. Kenedy Ranch 1, 23,600 ft w line, 37,000 ft s line of e line Penascal grant, lcn.

**Kerr County**—F. Edmiston, Saul 1, 1320 ft s line, 1320 ft e line of 640 ac tr and TW and NE railroad survey 47, lcn.

**Live Oak County**—Harry Hotchkin, Wade 1, begin se corner J. C. Pearce survey, Ab. 318, thence 1930 ft s along w line of Sommers sur, thence 330 ft e at right angle to lcn in J. Sommers survey, Ab. 427, lcn.

**McMullen County**—Boysen and Jones, E. R. Hagist 1, 330 ft fr most s'ly s line and 330 ft fr most e'ly w line of 160-ac lse, BS&F sec 127, lcn.

### COMPLETIONS

**Bexar County**—Joe A. Noake, Oppenheimer 1, 150 ft w line, 2266 ft s line of 227-ac tr, Wm. Miller sur, 1000-ac blk, hard sandy sh with oil odor 1004-05 ft, abnd 1005 ft; will drill 600 ft north.

**Duval County**—Goldrus Drilling Co., Society for the Propagation of the Faith 1, 990 ft nw line, 330 ft ne line of Pedro de Lazerda sur 7, top Pettus 4263 ft, salt water 3567-3629 ft, 3817-35 ft, abnd. Texas Inland Oil & Gas Co., Adami Brothers 1, 220 ft s line, 220 ft e line, blk 9, A. & B. sur 47, top Cole 360 ft, top lower Mirando 1289 ft, sand 360-70 ft with oil odor, sand 1289-97 ft, abnd 1297 ft.

**Frio County**—Hickock & Reynolds, San Antonio Joint Stock 1, 330 ft n line, 330 ft w line of sur 54, top Navarro 1450 ft, top Taylor 2005 ft, top litho Taylor 2160 ft, top Edwards 3493 ft, sand with oil stains 3493-94 ft, abnd 3555 ft.

**Guadalupe County**—J. A. Hollifield et al, Claude Broadnax 1, 660 ft nw line, 1000 ft ne line of 90-ac lse, top Austin chalk 1856 ft, top Edwards 2231 ft, abnd 2232 ft.

**Jim Wells County**—Shell Petroleum Corp., Von Blucher 1, 2970 ft w'ly w line, 1980 ft s'ly s line of Mrs. L. Best sur 362, snd with oil odor 7716-20 ft, showing 36 bpd, 3/64 in ch, 3500 lbs. press, 54-gravity dist, 1,300,000 cubic feet gas when shut in 3800 lbs, press, total depth 7845 ft.

**Karnes County**—Fomax Oil Corp., Pfluger 1, 150 ft n and 150 ft w line of e half of 165.39 ac tr, Erasho Seguin sur, Pettus sand 823-56 ft, show of gas, abnd 1969 ft.

**Medina County**—J. I. and J. W. Cromwell, Pauline Tondrie 1, 450 ft s line, 1080 ft w line of 403-ac lse, in I. K. Rogers sur, lime with oil show 1021-83 ft, abnd 1336 ft.

**Travis County**—O. G. Raesz and C. G. Featherstone L. Jones 1, 150 ft most n'ly ne line of 168-ac tr, 850 ft ne R. F. C. No. 1 Jones, Reuben Hornsby sur, abnd 1110 ft.

**Victoria County**—Harry L. Edwards Drilling Co., Strobel 1, 330 ft s line, 330 ft e line of 53.5-ac lse, Jose Maria Corbarrubias sur, top Vicksburg 4948 ft, no shows, abnd 5506 ft.

**Webb County**—Rodney DeLange, J. V. Cuellar 1, 330 ft s line, 330 ft e line 60-ac tr, T&NO Section 134, sand 2413-23 ft, no shows, abnd 2757 ft.

**Williamson County**—L. B. Burnette, Jr., Tr., Reed 1, 1356 ft n line, 1835 ft w line of 400-ac lse, E. Leichtle league, abnd 1045 ft.

## EAST TEXAS

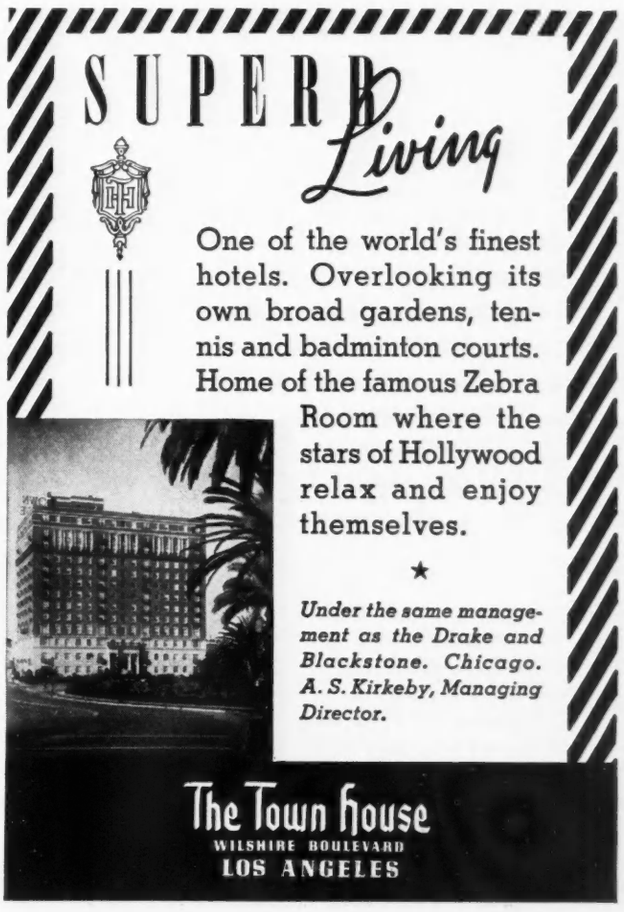
### FIRST REPORTS

**Kaufman County**—McGee et al's Gen'l American Insurance Co. 1, 5500 ft fr e and 5000 ft fr n lines John Baker sur, cem 10-in cas 50 ft.

### COMPLETIONS

**Falls County**—R. L. Seastrunk et al's J. B. Trewitt 1, J. A. Manchaca sur, 4 mi e Chilton, elev 430 ft, top Buda 1068 ft, abnd 1202 ft.

**San Augustine County**—Superior Oil Corp., Long Bell 1, SP RR Survey 5, elev 367 ft, Wilcox 510-3060 ft, top Navarro 4053 ft, Pecan Gap 4393-4630 ft, Wolfe City 4684-4730 ft, top Georgetown lime 5595 ft, porous lime, sg 5628-52 ft, dry abnd td 5723 ft lime.


SUPERB Living
One of the world's finest hotels. Overlooking its own broad gardens, tennis and badminton courts. Home of the famous Zebra Room where the stars of Hollywood relax and enjoy themselves.
★
Under the same management as the Drake and Blackstone. Chicago. A. S. Kirkeby, Managing Director.
The Town House
WILSHIRE BOULEVARD
LOS ANGELES

# NOT HOW HEAVY, BUT HOW STRONG

The Christmas tree valve must do its job — and a most responsible job it is—with minimum supervision and maintenance. There's no room around a high pressure well for equipment that needs a nurse maid.

That is the reason why cast Manganese-Molybdenum steel is becoming practically standard for Christmas tree valve bodies. This steel is so strong that unduly heavy sections are not needed to stand the tremendous pressures involved. It has good resistance to abrasion from scale or sand. It will make castings practically free from leak-causing defects. And last, but by no means least, it is comparatively inexpensive.

Further information about cast Manganese-Molybdenum steel and its uses, as well as about other Molybdenum steels used in oil drilling and pumping equipment, are given in our free technical book "Molybdenum in Oil Production."

MOLY

Climax Molybdenum Company
500 Fifth Avenue New York City

# NOTES FOR THE Equipment Buyer and User

## Cable-Tool Equipment
**SPANG & COMPANY**

Among the new equipment being manufactured by Spang & Company, Butler, Pa., for the cable-tool system of drilling, are the three products here illustrated.

**Figure P-253**

The Spang Safety Drilling-In Head and Oil Saver (Figure P-253) is designed to divert oil and gas out of the rig during drilling-in operation. It consists of a head fitted with wiper shut-off rings, through which the cable tools or a small size bailer may be passed with but minor leakage. A quick-acting gate valve is mounted below the head, above a diversion chamber to which the lead line is attached. An automatic-opening oil saver is mounted above the head. In Figure P-254, the head is shown with an auxiliary top, used to adapt the equipment to the use of the various types of automatic tubing spiders, for running tubing after the well has been drilled in.

**Fig. P-254**

The Spang-Ekin Drive-Pipe Head and Driver (Figure T-260) makes the driving of drive pipe in cable-tool-drilled wells possible without the need of auxiliary drive clamps, and saves the time ordinarily consumed in attaching them to the stem and their subsequent removal. In addition to the time saved in handling the removable clamps, the use of this equipment is said to be a safety measure for the drilling crew. Its solid construction assures a blow that strikes fairly without angular stress.

**Fig. P-260**

By the use of the Spang Cement Spray Gun, cement, or a mixture of cement and aquajel, may be sprayed on the walls of dry caves. This holds the dry caves in place and prevents their caving, even if water later rises over them.

**Fig. P-245**

**Fig. P-246**

The complete assembly consists of a loading-chamber top (with a bail for attaching the gun to the sand line) and a loading door into which the mixed cement is poured. A trip valve closes the lower end of the tubing, in order to hold the load of mixed cement in place until it is ready to be released, after the cement has been carried to the desired point in the well. The trip-valve chamber is shown in the closed position in Figure P-245, and in the open position in Figure P-246.

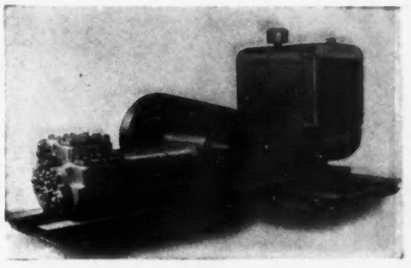
## Pump Power—Diesel
**NOVO ENGINE COMPANY**

Novo Engine Company, Lansing, Michigan, announces that its duplex Power Pump, Model OP, is now furnished with Superior Diesel power unit, Model 1A-2. This new pump is driven through a quadruple V-belt drive. For easy portability, pump and power unit are mounted on separate, heavy-duty skids which bolt rigidly together when pump is in service.

Power unit is mounted on steel channels equipped with adjustment screws for adjusting belt tension.

Pump is also furnished with electric motor, gasoline engine, or less power.

Pump liners, valves, pistons, and piston rods are interchangeable for handling water, slush, or oil. Roller bearings are used on main and pinion shafts. Pump is fully enclosed and flood lubricated. Built in four sizes with 2½, 3, 3½ and 4-inch bore and a 6-inch stroke. Pressure ranges from 300 to 800 pounds.



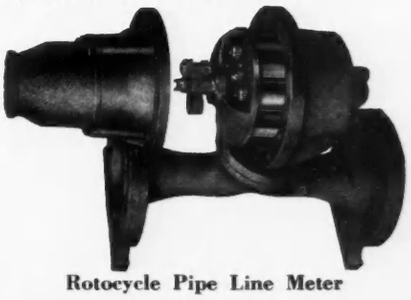
**Novo Pump**

Descriptive Bulletin No. 109 is available from Novo Engine Company, Lansing, Michigan, or at all National Supply Company stores, exclusive distributors for Novo equipment in the oil fields.

## Pipe Line Meter Introduced
**PITTSBURGH EQUITABLE METER COMPANY**

The Rotocycle meter, recently introduced by Pittsburgh Equitable Meter Company, Pittsburgh, is described by the manufacturer as a new development in positive displacement measurement, which is said to measure accurately at all rates of flows, under varying pressures, specific gravities and viscosities. It is stated that the meter is so designed that it will withstand the shocks and strains imposed by pipe line pumping.

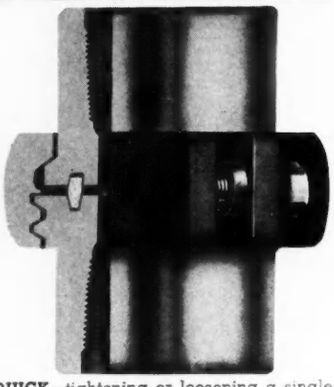
The manufacturers' prospectus calls attention to the facts that the Rotocycle is self-cleaning and that paraffin deposits on the working mechanism will not affect the accuracy. It is pointed out that in the Rotocycle the oil flows as a continuous streamline cycle with no appreciable loss in pressure.



**Rotocycle Pipe Line Meter**

The Rotocycle is said to be the first positive displacement meter to have an operating mechanism consisting entirely of rotating parts. The meter consists of an elevated cylindrical housing with inlet and outlet ports so designed that the flow of oil moves in an unrestricted path. These two ports are separated by a division plate at the bottom of the body so that the liquid can flow in only one direction. The entire mechanism is elevated above the pipe line so that oil enters at the bottom, flows around the

# RED-REX
## PIPE UNIONS



**QUICK**—tightening or loosening a single screw makes or breaks the joint.

**EFFICIENT**—provides leak-proof joint under both high pressures and temperatures . . . loose thread between hub and nut permits expansion and contraction, and facilitates connecting misaligned members.

**ECONOMICAL**—rugged construction and renewable parts assure long life of economical service.

Full range of sizes and pressures, in malleable iron and steel

**OIL CITY BRASS WORKS**
Founders—Manufacturers—Machinists
BEAUMONT, TEXAS—U.S.A.
*Sold Through Supply Stores*



A New A. A. P. G. Book

## MIOCENE STRATIGRAPHY OF CALIFORNIA

By ROBERT M. KLEINPELL

This Work Establishes a Standard Chronologic-Biostratigraphic Section for the Miocene of California and Compares It with the Typical Stratigraphic Sequence of the Tertiary of Europe.

CONDENSED TABLE OF CONTENTS

| | Page |
|---|---|
| Introduction and Scope | 1 |
| The Reliz Canyon Section | 7 |
| Correlation and Age | 20 |
| Formational Correlations within the California Province | 159 |
| Systematic Catalogue | 182 |
| Index | 357 |

400+ pages; 14 line drawings, including a large correlation chart in pocket; 22 full-tone plates of Foraminifera; 18 tables (check lists, and a range chart of 15 pages) Bound in blue cloth; gold stamped; paper jacket; 6x9 inches.

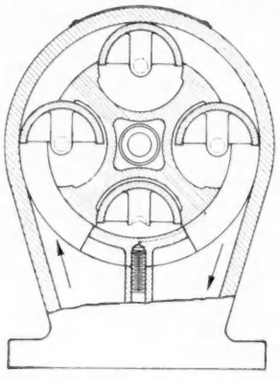
PRICE: $5.00, POSTPAID

THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS
Box 979, Tulsa, Okla., U. S. A.
London: Thomas Murby & Co., 1, Fleet Lane, E.C. 4


# NOTES FOR THE Equipment Buyer and User

measuring chamber and out again at the bottom of the chamber.

The rotor or measuring element of the meter is a cylinder carrying four half-moon-shaped buckets equidistantly spaced on its outer circumference which



**Sectional Drawing of Meter**

are geared together in a ratio of 1 to 1 on top of the rotor. As the rotor turns, the position of these buckets with relation to the side walls of the measuring chamber varies, always, however, so that two buckets are in contact to form a closed compartment. The volume in this compartment is a definite displacement, and a certain number of these displacements are counted and recorded on the register for every barrel or gallon passing through the meter.

It will be noted that the buckets themselves do not rotate, but travel on an orbit with their centerlines always parallel to the centerline of the meter case. The rotor turns, but since the buckets are geared together at a ratio of 1 to 1, they remain in the same relative position to each other throughout each cycle. The action is identical to that of a Ferris wheel carrying four cars equi-spaced on its circumference. The circumference of the Ferris wheel corresponds to the outside circumference of the rotor and the cars correspond to the buckets. Gravity in the case of the Ferris wheel keeps the cars on a plane parallel with the ground, whereas in the Rotocycle gearing is utilized to accomplish the same purpose.

Manufacturers' literature fully describing the Pittsburgh Rotocycle Meter can be obtained by writing Pittsburgh Equitable Meter Company, Pittsburgh, Pennsylvania. Ask for Bulletin OG-125.

### Geared Drives for All Industries Discussed

A new booklet explaining the uses, adaptations and developments of all types of geared drives has just been announced by the Westinghouse Electric & Manufacturing Company. The booklet gives special emphasis on the quarry, textile, pulp and paper, coal, steel and petroleum industries, but also includes other industries utilizing electrical power.

Single, double and triple reduction gearmotors; single and double reduction speed reducers; special vertical and right angle vertical geared drives; single and double reduction heavy duty mill units; horizontal speed reducers with shafts in vertical plane; geared drives for special problems and conditions; and open gearing are discussed.

In the assembly of gear drives; great pains assure long life and superior performance. Accuracy of meshing is maintained by anti-friction bearings. Speed reducers are assembled as a unit. Where they become part of a gearmotor, the final gearmotor assembly is tested as a complete unit.

This new publication, profusely illustrated, may be secured from the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylavnia.

### Louis Allis Issues Motor Application Chart

The Louis Allis Company has issued a Motor Application Chart which lists 26 different types of motors and checks the proper type of motor recommended for about 50 standard applications.

It also analyzes the starting, maximum and full load torque characteristics of these motors; speed regulation; percent of slip and a wealth of other valuable information compiled for ready reference.

A copy of one of these new motor application charts will be sent without charge.

Ask for copy of Bulletin No. 515 and address the Advertising Department of The Louis Allis Company, Milwaukee, Wisconsin.

### General Electric Company Plans Chicago Building

Land has been purchased for a modern building to house the General Electric Company's Chicago headquarters. The site occupies the block bounded by South Canal, South Clinton, West Cabrini and West Arthington Streets.

Work will soon be started on the building which will provide space for General Electric Company's sales offices, warehouse and service shop; General Electric Supply Corporation; R. Cooper, Jr., Inc.; and other associated interests.


Standco
NO-SMOKE
**STANDCO BRAKE LINING**
**Nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 2100, Composite Catalog.**
**Standard Brake Lining Co.**

# NOTES FOR THE Equipment Buyer and User

### U. S. Rubber Announces Changes in Wire Division Sales Personnel

A number of changes in the executive personnel of the Wire Department, United States Rubber Company, were announced recently by C. W. Higbee, manager of the department.

M. P. Lewis, former Eastern district manager, has been appointed assistant manager of the wire sales department, with headquarters at the company's main office, 1790 Broadway, New York.

**M. P. LEWIS**
**Assistant Manager of Wire Sales, U. S. Rubber Company**

Lewis has a long, successful experience in the electrical industry, having joined United States Rubber Company in 1919. He started his service with the company at the Bristol, Rhode Island, wire factory, where he was employed for two years in the sales and service departments. In 1921 he came to the New York sales office. For the first year and a half at this branch he handled important industrial accounts in the territory. Following this, he took over important electrical industry accounts in the New York branch, as well, and two years ago was placed in charge of sales of the Eastern district of United States Rubber Company.

H. H. Weber, assistant manager of the wire sales department since 1934, has been appointed commercial engineer of that department. Previously, he was in the engineering divisions of Rome Wire Company, and General Cable Corporation. He is a member of the A.I.E.E., A.S.T.M., National Municipal Signal Association, National Electrical Manufacturers Association, National Fire Protection Association, and American Standards Association.

Succeeding Lewis as manager of wire sales for the company's Eastern district will be H. J. MacDonald, whose new position embraces the Boston, Philadelphia, New York, Pittsburgh, Detroit, Cleveland, Buffalo, and Syracuse branches. He has handled wire sales in the New England territory for the past 18 years.

MacDonald is a member of the Electrical Manufacturers' Representatives' Club of New England, of which he is now president; Engineers Club; and the International Municipal Signal Association. He is also a member of the New England Police Reserve League, and has served as chairman of the Electrical Trade Show.

Appointed to the post formerly held by MacDonald is C. W. Short, for the past two years development manager at the Bristol plant. A native of Rhode Island, he was graduated from Rhode Island State College in 1916, with a degree of Bachelor of Science in Chemical Engineering. Following two years of war service, he joined United States Rubber Company in 1922, as a chemist at the Bristol factory. Subsequently, he served as chief inspector of the footwear division; general foreman, making department, footwear division; general foreman, mill and calendar room; and as chief chemist and chief engineer of the wire department.

### Wheeling Steel Corporation Buys Atlas Supply Company

Wheeling Steel Corporation, Wheeling, West Virginia, announced February 1 the purchase of Atlas Supply Company, distributor of oil country supplies with headquarters at Muskogee, Oklahoma. Atlas Supply Company operates 16 stores located in oil fields of Oklahoma, Texas and Kansas.

No change in policy is contemplated, it was said, and the Atlas Supply Company organization will remain unchanged, under the direction of J. H. McDonald, president.

### American Chain & Cable Company Shifts Sales Representatives

American Chain & Cable Company, Inc., announces that R. E. Greenwood has been appointed district sales manager of the Chicago territory of the American Chain Division, with headquarters at 400 West Madison Street, Chicago, succeeding G. B. Kutz who has been transferred to York, Pennsylvania, as assistant to the general manager of sales, American Chain Division.

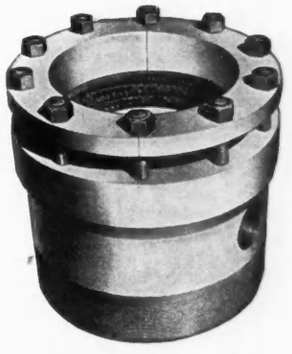
R. C. Brenizer has been appointed Philadelphia district sales manager of the American Chain Division, with headquarters at Second and Diamond Streets, Philadelphia, succeeding R. E. Greenwood, transferred to Chicago.

### Billings Appoints W. D. Endres Sales Manager of Tool Division

The Billings & Spencer Company of Hartford, Connecticut, manufacturers of Billings forged tools, has appointed W. D. Endres as sales manager in charge of the merchandise tool division, succeeding W. Roy Moore who recently resigned.

Endres, who is a native of Kansas City and a graduate of Northwestern University, has been divisional manager


**CASING HEADS**
***of Forged Steel***



**There is a Brewster Head for every casing or collar size and any pressure up to 10,000 pounds. Many are provided with a special feature that permits re-packing under pressure. All studs are heat-treated. Let us have your requirements and we will gladly quote prices and send you a catalog.**

**The BREWSTER CO., Inc.**
**Phone 2-3181** **Shreveport, La.**
**New Iberia . Houma . Lake Charles . Rodessa**

**Field Performance Sells Keystones**

One driller tells another—results, more and more Keystones are sold.

The model 80 series have established all-time Keystone records — because of superior engineering construction.

Trouble-free drilling, clean-out, pipe handling, economical field performance, are yours in Keystone Spudders.

**Get complete data, write.**

**Keystone Driller Co.**

**BEAVER FALLS, PA.**
**JOPLIN, MO. WAUKEGAN, ILL.**
**ARLINGTON, N. J.**

**WE CAN TURN YOUR OIL DEAL**

We like the big ones best. Save commissions. Send no information. Just your name and address to . . . THE BROKER, 906 Tulsa Loan Building, Tulsa, Oklahoma.

**WANTED**—Petroleum or Chemical engineer for drilling mud research laboratory. Must be a college graduate out of school one year or less. State experience and salary requirements. Box 2708, The Oil Weekly, Houston, Texas.

**William M. Barret, Inc.**
Consulting Geophysicists
*Specializing in Magnetic Surveys*
Contracts accepted for domestic and foreign projects, using the most improved instrumental and interpretative technique.
GIDDENS-LANE BUILDING
SHREVEPORT, LOUISIANA

**THE FORT WORTH LABORATORIES**
Analyses of oil field brines, cores, gas oil, and minerals. Field gas testing. R. H Fash, Vice-President; Long distance 138 828½ Monroe Street, Fort Worth, Texas

**JACK A. SCHLEY**
Patent Attorney
(Established 1902)
PATENTS—INFRINGEMENTS—OPINIONS
San Antonio—Washington, D. C.
906 SECOND NAT'L BK. BLDG.—HOUSTON
1807-11 TOWER PETROLEUM BLDG. DALLAS

**PATENTS**
Patents, Trade Marks, Copyrights and Infringement Litigation
**HARDWAY & CATHEY**
428-29-30 Bankers Mortgage Bldg.
Phone Capitol 9756 Houston, Texas

**ALASKA! KODIAK BEAR!**
(WORLD'S LARGEST BEAR)
1939 Spring Hunts NOW Booking! Hunt these Monster Bears with KODIAK GUIDES who know the country and have numerous references of successful hunts. REAL T-H-R-I-L-L-S AND REAL TROPHIES.
Winter mails to Alaska are slow and spring hunting begins about April 15th so WIRE or WRITE NOW via Air Mail for further details.
*"Also 1939 Fall Hunts for Mixed Bag"*
**KODIAK GUIDES**
KODIAK BOX 8. ALASKA

**HOARD EXPLORATION COMPANY**
Seismograph Surveys
618 Esperson Bldg.
Houston Texas

**HOUSTON LABORATORIES**
Analytical and Consulting Chemists
Podbielniak Gas Analyses
Oil Field Brines, Waters and Cores
Complete Evaluation of Crude Oils
Long Distance 267, Box 132, Houston, Texas

# NOTES FOR THE Equipment Buyer and User

of the Billings & Spencer Chicago branch office and warehouse. He has done extensive merchandising and sales promotional work over the past several years and, in addition, has had considerable experience in sales direction.

## W. H. Fogarty Assistant to J-M Vice President

William H. Fogarty, who has spent 27 of his 30 years with Johns-Manville in the company's Chicago office, has been transferred from the Chicago district managership of the power products department to assistant to the vice president of J-M Sales Corporation. He will continue to make his headquarters in Chicago.

He will be succeeded as district manager by Corydon H. Hall, who for the last three years has been assistant sales manager in J-M's New York power products district.

## Houston Oil Show Will Feature Safety Work

The importance of safety work, what it has accomplished and its value in all branches of the petroleum industry will be an outstanding feature of the Oil-World Exposition to be held in Houston, Texas, from April 24 to 29, inclusive. An extensive program covering the various phases of safety practice that are achieving such excellent results in field and plant will be given in the Convention Hall of the Coliseum on Thursday, April 27, and Friday, April 28, and will bring to the thousands of oil men in attendance speakers of authority from various parts of the country. This program will include not only technical and practical discussions on safety practices but will also provide interesting demonstration work and display of safety equipment.

The program will start on Thursday evening with a banquet and meeting under the auspices of the American Society of Safety Engineers. On Friday morning will be a general and prepared round-table discussion on safety practices as they pertain to the various branches of the petroleum industry. This session will be under the chairmanship of T. S. Maffitt, safety engineer, Houston Oil Company.

On Friday afternoon, with P. E. Keegan of Shell Petroleum Corporation, presiding, addresses will be given by Daniel Harrington, chief safety engineer, United States Bureau of Mines, Washington, and J. J. Forbes, supervising safety engineer of the Bureau of Mines at Pittsburgh. During the afternoon a demonstration of fire and gas hazards as they occur in the oil industry will be given by G. M. Kintz, supervising engineer of the Safety Section of the Bureau of Mines at Dallas, Texas. Special equipment will be installed for these demonstrations and Kintz will bring two especially equipped trucks to demonstrate various safety methods in vogue and the latest type of equipment used.

Safety engineers from the entire petroleum industry will participate in the program. Organizations other than the Bureau of Mines that will also be active in this work include the National Safety Council, the Harris County Emergency Corps and several other safety organizations. On Friday night, C. A. Miller, director of personnel of The Texas Company, will introduce a number of oil field employees who have saved the lives of fellow workers by rescue and artificial respiration. This will be followed with a demonstration by S. E. Whiting, vice president and chief engineer, Liberty Mutual Insurance Company of Boston, Mass., which will show the safe procedure to follow in rescuing workmen from inclosed spaces and gas-laden tanks.

The Oil-World Exposition is providing a very large exhibiting space for

**Petroleum Industry Safety Engineers who completed plans for Oil-World Exposition Safety Program and Meetings: J. J. Delahide, H. B. Williams, Ed G. Lenzner, J. B. McAtee, T. S. Maffitt, Jr., F. P. Werner, G. M. Kintz, R. H. Horde, H. L. Rankin, Vic Hayslip, and C. A. Miller.**

# NOTES FOR THE Equipment Buyer and User

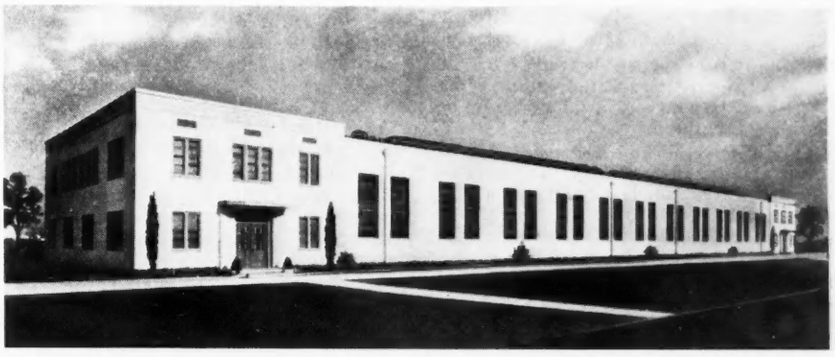
the U. S. Bureau of Mines in which will be installed an extensive safety exhibit. This will be used to demonstrate safety practices during the entire week of the show. The Bureau's Rescue Truck and Apparatus from McAlester, Oklahoma, will also be on display. The Bureau of Mines, in cooperation with a number of safety engineers, is planning the erection of a special type of steel derrick equipped with all the latest safety devices in order to demonstrate to the industry the most practical safety measures available for oil field use. During the exposition, safety inspections of buildings, grounds and exhibits will be made by a special safety committee of which F. P. Werner, safety director, American Petroleum Company is chairman.

The general safety committee of the Oil-World Exposition is composed of the following: J. J. Delahide, B. F. McDonald Company, general chairman; R. B. Roaper, Humble Oil & Refining Company; C. A. Miller, The Texas Company; C. L. Hightower, United Gas Systems; P. E. Keegan, Shell Petroleum Corporation; F. P. Werner, American Petroleum Company; Lee Connor, The Texas Company; H. L. Rankin, Gulf Oil Corporation; G. J. Gruber, Mine Safety Appliances Company; R. H. Horde, Shell Petroleum Corporation; T. S. Maffitt, Jr., Houston Oil Company; William Grant, Jr., Humble Oil & Refining Company; C. M. Liles, Magnolia Petroleum Company; C. W. Coleman, Gulf Oil Corporation; H. G. Bourne, American Optical Company; Don Cross, Accident Prevention Company; J. L. Manes, Sun Oil Company; J. L. Risinger, Magnolia Petroleum Company; E. W. Breeland, Lone Star Gas Company; H. B. Williams, Pan American Petroleum Company; Robert Skelton, American Red Cross; G. M. Kintz, U. S. Bureau of Mines; Rufus Owens, United Employers Casualty Company; and Ed. Lenzner, Oil-World Exposition, Inc.

## Smith Meter Company Builds New Plant

The new plant of the Smith Meter Company, equipped for volume production and providing needed room for expansion, has been completed at 5140 E. Leneve Street, East Los Angeles, and is now occupied by the company, manufacturers of a complete line of rotary-action, positive displacement type petroleum meters.

The new structure, said to be one of the most modern industrial plants in the country, is of steel and stucco construction. Scientifically improved artificial lighting is provided for use when needed—while window lights and skylights of special glass give efficient diffusion of daylight for the precision work essential to the construction of Smith Meters. General offices and research division are housed in an ad-



**Smith Meter Company's New Plant**


*Reduce your pumping costs*

***One of the most dependable ways in which to reduce pumping costs is to install***

**B-M-W Admore Insert Pump Anchors**

***This useful device:***

1. **Saves TIME by eliminating the necessity of pulling tubing, and by simplifying pumping operations.**
2. **Saves POWER where the fluid level is high and the well can be pumped above bottom.**
3. **Saves the FIRST COST of other seating means such as working barrels, seating nipples, or mechanical shoes. And where the fluid level is high there is a further saving in sucker rods and other equipment.**

Screws directly onto the pump. Replaces the conventional cup or mechanical hold-down. Pump is operated in the usual way with no special care required. When the desired setting position is reached the slips are tripped by lifting and turning the rods, and the packer is set by the weight of the rods. Complete data on request. **See our advertisement in the "Composite Catalog."**

**SUPPLY STORES SELL THEM**

**Also such other B-M-W Products as: ● NEILSON TOOLS (Safety Sucker Rod Hooks; Tubing Hooks, Rod Elevators, Sucker Rod Sockets, etc.); ● BALLS and SEATS (made for every pumping service) including the new TOWER TYPE Ball and Seat and the new 2-WAY NON-MAGNETIC Crown; ● ADMORE Liner Barrels; ● TEX TYPE Plunger Fittings and Valves; and ● COLLINS Belt Clamps.**

**BRADFORD MOTOR WORKS INC.**

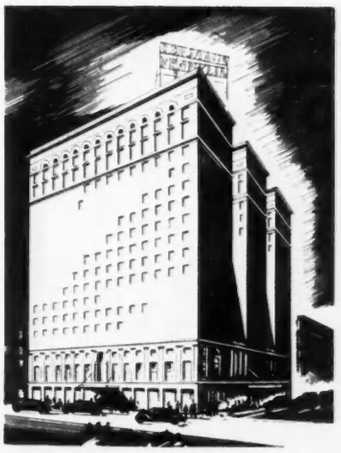
OIL WELL SUPPLIES

BRADFORD, PA. — TULSA, OKLA.



*Philadelphia's Foremost Hotel*

A GREAT NAME



A GREAT HOTEL

1. Foremost in size—1200 rooms, all with bath, circulating ice water.
2. Foremost in value—more for your money in honest-to-goodness comfort.
3. Foremost in location—at Chestnut and Ninth—in the heart of Philadelphia.
4. Foremost in food—3 excellent restaurants. Air-conditioned in the summer.

*The* ***BENJAMIN FRANKLIN***

SAMUEL EARLEY, *Managing Director*

# NOTES FOR THE Equipment Buyer and User

joining two-story portion of the new building.

In addition to this large new unit, the company will continue to maintain its meter laboratory located at the old Fishburn Street address in Los Angeles, where, according to present plans, complete machine-shop facilities will be retained for the building of experimental meter models.

The Smith Meter Company is a subsidiary of the A. O. Smith Corporation of Milwaukee, Wisconsin.

## Wilson Supply Company Issues New Booklet on Nixon Gas-Lift

An elaborate new brochure entitled, "The Sun Rises on An Advanced Nixon Surface Control Gas-Lift System," has just been issued by Wilson Supply Company, Houston, Texas.

This new booklet describes certain advancements in the design and operation of the system. It is comprehensive in its treatment of the system's operation, and the success it has had.

A copy of the book may be obtained by writing to the company.

## E. M. Smith Will Continue To Be Active in Oil Equipment

E. M. Smith, founder and former president of Emsco Derrick & Equipment Company, who recently disposed of his interests to The Youngstown Sheet and Tube Company, announces that he will continue to be active in the oil equipment industry and will retain his contacts with oil people throughout the world.

For the present, he will be located at E. M. Smith Company's branch office at 1121 Rothwell Street, Houston, where the company maintains warehouse facilities with complete stocks of the full line of Grizzly products for distribution to the Mid-Continent and Gulf Coast oil fields.

## Axelson's California Sales Force Holds Conference

Members of Axelson Manufacturing Company's California sales force recently met for a two-day session at the main plant in Los Angeles. Under the direction of Alvin Zwerneman, California sales manager, various field services and distribution problems were discussed.

Zwerneman pointed out that this meeting was only one of a number scheduled for 1939, all designed to make the company's service to the oil operators more complete and far-reaching.

**E. M. SMITH**
**Now Maintaining Headquarters at Houston.**

**Axelson's sales executives hold two-day meeting at Los Angeles headquarters. Beginning at the extreme left and reading around the circle are: Alvin Zwerneman, Ray M. Humphreys, M. Ray Conger, Howard F. Donley, Glynn Williams, Willard F. Goertz, Stanley Morrish, Clinton J. Huyck, Philip E. Humphreys, Howard Cowan, W. Harry Getsinger, William R. Jennings, Edwin F. Green, Milfred J. Parker, Abraham G. Haglund, Clayton E. Rose, Harlan S. Kelley, William H. Jackson, Elmer J. Phillips.**

# Squeaks from the Bull Wheel

### Netherlander

"So Sandy forgets his nationality when he takes you to dinner?"

"Yes, then he goes Dutch."

### Getting in Practice

The newlyweds had just gotten off their train.

"John, dear," said the bride, "let us try to make the people think we have been married a long time."

"All right, honey," was the answer, "you carry the suitcases."

### A Help

"I want a pillowcase, please."

"Yes," said the girl. "What size?"

The young man looked awkward. "Why—er—I'm not sure," he said, "but I take a 6⅞ hat."

### Besetting Weakness

"A husband like yours must have been hard to find."

"He still is when I need him."

### Too Healthy

"Yes, this is the healthiest village in the country. In the past 15 years we've had only one death."

"Who died?"

"The doctor—from starvation."

### Appropriate

"But what made you give your dog the strange name of Ben Hur?"

"Well, you see, I wanted to name it after our hired man, Ben; and when I found it was a her, I just called it Ben Hur."

### Equality

"Why is it that you are always at the bottom of the class?"

"It doesn't make any difference daddy, they teach the same things at both ends."

### Hm-m

"Come upstairs and let me wash your hands," said the mother when she arrived with her little daughter for tea at grandmother's.

"I don't want to go up," wailed Winnie, aged four.

"Let her wash them down in the kitchen," called grandmother. "She can do it just as well."

"No," her mother said firmly. "I want her to come up with me."

Winnie went upstairs slowly. Turning to her mother, she asked: "Why don't you obey your mother?"

### Well Defined

Johnny, will you please tell the class what an octopus is?

It must be a cat with eight sides.

### Exceptional Child

Dat child o' yourn am mighty slow learnin' at school. How does yo' all account fo' dat?

Well, de school am two miles from heah, an' dat chile done fo'gits all de teachah tells him fo' he gits half way home.

### His Alibi

May I have the afternoon off to go shopping with my wife?

No.

Thanks ever so much.

### Reciprocity

"Say, is that Brown's rake you've got?" one neighbor called to another.

"Yes, it is," was the reply.

"That's good. If you'll let me borrow it occasionally, I'll let you have his lawnmower now and then."

### Changed Her Mind

Mistress (after giving orders for half an hour)—"Now are there any questions you would like to ask?"

New Maid—"Yessum, can I use your phone to call the depot and tell them to keep my trunk there?"

### Getting Careless

The salesman stopped at the house and asked the lady if he could interest her husband in an electric razor.

"He might be interested in your razor," she remarked, "for he shaves close onto once a year."

"Shaves once a year!" echoed the salesman. "I never heard of anything like it."

The lady nodded. "He used to shave twice a year," she drawled, "but that was when we had lady lodgers."

### Poker Face

"Son, I never knew what it was to kiss a girl until I courted your mother. I wonder if you will be able to say the same to your children."

"I think so, Dad, but not with such a straight face as yours."

### In a Bad Way

You ain't yo'self no mo'. Sick or sump'n?

Ah got insomnia. Ah keeps wakin' up ev'ry few days.

### Defined

William, what are the two genders?

Masculine and feminine. The feminine are divided into frigid and torrid, the masculine into temperate and intemperate.

### Leniency

The actor had been sentenced to six months in jail.

"You have made a serious error," declaimed the actor. "Do you realize whom you are sentencing to six months in jail? I, sir, am the one and only Telix Hameroo! Do you realize that I played Hamlet to packed houses 20 years ago? You, sir—you must have seen me play the role."

The judge nodded slowly. "Yes," he said, "I saw you. But I feel lenient today. We'll let the six months cover both offenses."

### That's Why

"Why haven't you pressed your trousers?" roared the sergeant-major.

"I had them under the mattress all night, but I'm such a light sleeper," replied the recruit meekly.

### Hm-m!

"How's de collection at yo' church, Brother Moses?"

"Well I ain't had to stop lately in de middle of de collection to go an empty de box."

### Shutout

You didn't go so well with that millionaire's daughter, hey?

Terrible; no hits, no runs, no heiress.

### Cheerful Thought

"What have you got that meter on your car for?"

"Why, mon, it cheers me to see all the money I might have been spending."

Gotkool
WATER CANS
& COOLERS
GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . . .
Gott
WATER CAN
GOTT WATER CAN
Made in 1½, 3, 5, and 10 gallon sizes.
GOTT WATER COOLER
Made in 3, 5, 8, 10, and 20 gallon sizes
H. P. GOTT MFG. CO.
WINFIELD, KANSAS
KEEP PURE DRINKING WATER ALWAYS HANDY

# INDEX TO ADVERTISERS


A

| | Page |
|---|---|
| J. S. Abercrombie Co. | — |
| Abercrombie Pump Co. | — |
| Acme Gas Lift Corp. | — |
| Ajax Iron Works | — |
| Allsteel Products Manufacturing Co. | — |
| American Askania Corp. | — |
| American Assn. of Petroleum Geologists | 92 |
| American Cable Division American Chain & Cable Co. | — |
| American Hammered Piston Ring Division of Koppers Co. | — |
| American Iron & Machine Works Co. | — |
| American Locomotive Co. | — |
| American Meter Co. | — |
| American Sand-Banum Co. | — |
| American Steel & Wire Co. | — |
| Athey Truss Wheel Co. | — |
| Atlas Ball Co. | 4 |
| Atlas Supply Co. | — |
| Axelson Manufacturing Co. | 47 |

B

| | Page |
|---|---|
| Baash-Ross Tool Co. | — |
| Baker Oil Tools, Inc. | 3 |
| Baldwin-Duckworth Chain Corp. | — |
| Bantam Bearings Corp. | — |
| Baroid Sales Co. | — |
| William M. Barret, Inc. | 94 |
| Bartlett-Hayward Division of Koppers Co. | — |
| Beaumont Iron Works Co. | — |
| Mills Bennett Production Co. | — |
| Bethlehem Steel Co. | 57 |
| Bettis Sales Co. | — |
| E. M. Blue & Son | — |
| Bradford Motor Works | 95 |
| The Brewster Co. | 93 |
| The Bridgeport Machine Co. | — |
| Broderick & Bascom Rope Co. | 53 |
| Buckeye Traction Ditcher Co. | — |
| A. M. Byers Co. | 8 |
| Byron Jackson Co. | — |

C

| | Page |
|---|---|
| Jo H. Cable | — |
| Cameron Iron Works | 35 |
| Carnegie-Illinois Steel Corp. | — |
| J. I. Case Co. | — |
| Caterpillar Tractor Co. | — |
| Chain Belt Co. | — |
| Chiksan Oil Tool Co. | — |
| Climax Molybdenum Co. | 90 |
| Columbia Steel Co. | — |
| Columbian Steel Tank Co. | — |
| Continental Motors Corp. | — |
| The Continental Supply Co. | — |
| Fred E. Cooper Co. | Second Cover |
| The Cooper-Bessemer Corp. | — |
| Core Drilling Co. | — |
| Crane Co. | — |
| Cummins Engine Co. | — |
| W. H. Curtin Co. | — |

D

| | Page |
|---|---|
| Darling Valve & Manufacturing Co. | — |
| The Dayton Rubber Mfg. Co. | — |
| Deckard Manufacturing Co. | — |
| Dedman Foundry & Machine Co. | — |
| DeWitt Operated Hotels | 89 |
| Diamond Chain & Manufacturing Co. | — |
| Dowell Incorporated | — |
| Dragon Manufacturing Co. | — |
| E. I. du Pont de Nemours & Co. | — |

E

| | Page |
|---|---|
| Eastman Oil Well Survey Co. | — |
| Economy Electric Lantern Co. | — |
| Elliott Core Drilling Co. | — |
| Elliott Manufacturing Co. | — |
| Enardo Foundry & Manufacturing Co. | — |

F

| | Page |
|---|---|
| Geo. E. Failing Supply Co. | — |
| First National Bank in Houston | — |
| First National Bank & Trust Co. of Tulsa | — |
| Fluid Packed Pump Company | — |
| The Fort Worth Laboratories | 94 |
| Benjamin Franklin Hotel | 95 |
| Frick-Reid Supply Corp. | — |

G

| | Page |
|---|---|
| Gardner-Denver Co. | — |
| The Garlock Packing Co. | — |
| Gaso Pump & Burner Manufacturing Co. | — |
| General Electric Co. | — |
| General Engineering & Model Works | — |
| General Motors Corp. | — |
| Geophysical Service, Inc. | — |
| H. P. Gott Manufacturing Co. | 97 |
| Grant Oil Tool Co. | — |
| Gray Tool Co. | 33 |
| The Guiberson Corp. | — |
| Gulf Coast Machine & Supply Co. | — |
| Gulf Envelope Co. | — |
| Gulf Publishing Co. | 4, 6-7 |
| Gulf States Utilities | — |

H

| | Page |
|---|---|
| Halliburton Oil Well Cementing Co. | — |
| Hamer Oil Tool Co. | — |
| Hardway & Cathey | 94 |
| Harnischfeger Corp. | — |
| Haynes Stellite Co. | — |
| Hazard Wire Rope Co. | — |
| The Hercules Powder Co. | — |
| Hewitt Rubber Corp. | — |
| Hoard Exploration Co. | 94 |
| Houston Laboratories | 94 |
| Hughes Tool Co. | 48-49, Fourth Cover |
| Humble Oil & Refining Co. | — |
| Hyatt Bearings Division | — |

I

| | Page |
|---|---|
| Independent Exploration Co. | — |
| Ingersoll-Rand Co. | — |
| International Derrick & Equipment Co. | — |
| International Harvester Co. | — |
| The International Nickel Co. | 29 |

J

| | Page |
|---|---|
| Jarecki Manufacturing Co. | — |
| Jensen Brothers Manufacturing Co. | — |
| Johns-Manville | — |
| The S. M. Jones Co. | — |
| Jones & Laughlin Steel Corp. | — |

K

| | Page |
|---|---|
| The Kennedy Valve Manufacturing Co. | — |
| Keuffel and Esser Co. | — |
| Keystone Driller Co. | 93 |
| Kirby Petroleum Co. | — |
| Kinzbach Tool Co. | — |
| Kodiak Guides | 94 |
| Koppers Co. | — |
| Kropp Forge Co. | — |

L

| | Page |
|---|---|
| Laminated Shim Co. | — |
| Landis Machine Co. | — |
| Lane-Wells Co. | 42-43 |
| Larkin Packer Co. | Third Cover |
| The Layne & Bowler Co. | — |
| Lee Rubber and Tire Corp. | — |
| A. Leschen & Sons Rope Co. | — |
| The Lincoln Electric Co. | — |
| Link Belt Co. | — |
| Lone Star Cement Corp. | 5 |
| Lucey Boiler & Manufacturing Co. | — |
| Neal Lucey Co. | — |
| Ludlow Valve Manufacturing Co. | — |
| Lufkin Foundry & Machine Co. | — |

M

| | Page |
|---|---|
| MacClatchie Manufacturing Co. | — |
| Macwhyte Co. | — |
| D. S. Mair Machinery Corp. | — |
| Maloney Tank Manufacturing Co. | — |
| Manhattan Rubber Division | — |
| Martin-Decker Corp. | — |
| McGill Manufacturing Co. | — |
| McKissick Products Corp. | — |
| Merco Nordstrom Valve Co. | First Cover |
| Merla Tool Co. | — |
| Metric Metal Works | — |
| Miller Sand Pump Co. | — |
| Mills Bennet Production Co. | — |
| Mission Manufacturing Co. | 10 |
| E. H. Moore, Inc. | — |
| Lee C. Moore & Co. | — |
| Morse Chain Co. | — |
| U. C. Murcell, Inc. | — |

N

| | Page |
|---|---|
| National Bank of Tulsa | — |
| National Lead Co. | — |
| The National Supply Co. | 31 |
| National Tube Co. | — |
| New Deal Specialty Co. | — |
| Norma-Hoffman Bearings Corp. | — |
| Norvell-Wilder Supply Co. | — |
| Novo Engine Co. | — |

O

| | Page |
|---|---|
| Walter O'Bannon Co. | — |
| O.C.S. Manufacturing Co. | — |
| Oil Center Tool Co. | — |
| Oil City Brass Works | 92 |
| Oil Well Improvements Co. | — |
| Oil Well Supply Co. | — |
| Oil-World Exposition, Inc. | — |
| Otis Pressure Control, Inc. | — |

P

| | Page |
|---|---|
| G. N. Parker | — |
| The Parkersburg Rig & Reel Co. | 51 |
| Patterson-Ballagh Corp. | — |
| Pelican Well Tool & Supply Co. | 82 |
| Petroleum Electric Power Club | — |
| Petroleum Rectifying Co. of California | — |
| Petty Geophysical Engineering Co. | — |
| Philadelphia Gear Works | — |
| Pittsburgh Equitable Meter Co. | First Cover |
| Pittsburgh Steel Co. | — |

R

| | Page |
|---|---|
| Raybestos-Manhattan | — |
| Reading-Pratt & Cady Division, American Chain & Cable Co. | 55 |
| Rector Well Equipment Co. | — |
| Reed Roller Bit Co. | 38-39 |
| Regan Forge & Engineering Co. | — |
| Republic Steel Corp. | — |
| The Ridge Tool Co. | — |

S

| | Page |
|---|---|
| Salt Dome Oil Corp. | — |
| Jack A. Schley | 94 |
| Schlumberger Well Surveying Corp. | — |
| Second National Bank | — |
| Security Engineering Co. | — |
| Seismic Exploration Co. | — |
| Seismograph Service Corp. | — |
| Shaffer Tool Works | — |
| Shell | — |
| SKF Industries, Inc. | — |
| A. O. Smith Corp. | — |
| E. M. Smith Co. | — |
| Howard Smith Co. | — |
| The Sonner Burner Co. | — |
| South Chester Tube Co. | 63 |
| Southern Engine & Pump Co. | — |
| Southern Pacific Lines | — |
| Spang & Co. | — |
| Spang Chalfant, Inc. | — |
| Sperry-Sun Well Surveying Co. | — |
| Standard Brake Lining Co. | 92 |
| Standard Pressed Steel Co. | — |
| Star Drilling Machine Co. | — |
| Sterling Engine Co. | — |
| Stevens Hotel | — |
| Sun Oil Co. | — |

T

| | Page |
|---|---|
| Templeton, Kenly & Co. | — |
| Texas Electric Steel Casting Co. | 41 |
| Texas Gulf Producing Co. | — |
| Texas Iron Works | — |
| Thermoid Rubber, Division of Thermoid Company | — |
| Thornhill-Craver Co. | — |
| The Timken Roller Bearing Co. | 27 |
| The Town House | 89 |
| Tretolite Co. | — |
| Trinity Portland Cement Co. | — |

U

| | Page |
|---|---|
| Union Carbide & Carbon Corp. | — |
| Union Wire Rope Corp. | — |
| United Gas Pipe Line Co. | — |
| United States Rubber Co. | — |
| United States Steel Corp. | — |
| Universal Atlas Cement Co. | — |

W

| | Page |
|---|---|
| Warner & Swasey Co. | — |
| The Watson-Stillman Co. | 86 |
| Waukesha Motor Co. | — |
| Westinghouse Electric & Mfg. Co. | — |
| Wheeling Machine Products Co. | — |
| Wickwire Spencer Steel Co. | 45 |
| J. H. Williams & Co. | — |
| Wilson Supply Co. | — |
| Worthington Pump & Machinery Corp. | — |

Y

| | Page |
|---|---|
| Young Engine Corp. | — |
| Youngstown Sheet & Tube Co. | — |